SCHOOL AND SOCIETY

Volume II SATURDAY, NOVEMBER 27, 1915 Number 48

THE AIM AND CONTENT OF HIGH-SCHOOL BIOLOGY[1]

IN reconstructing our educational machinery at least four variable factors must be considered, viz.: *equipment, pupil, teacher* and *plan*.

By *equipment* is meant all sorts of pedagogical material, both animate and inanimate, such as school buildings and furniture, library and laboratory facilities, janitors and superintendents.

Good educational results can be, and often are, attained in spite of a miserably poor outfit, and, on the other hand, it is possible to be so over-equipped that degeneration of initiative and resource is the result. In most instances there is provided for us an outfit to work with and it is our proper function to make the best of what we have rather than to attempt to change it in any fundamental way. At any rate there are more urgent and modifiable phases of our work than this. On a basis of 100 I should evaluate the equipment factor at about 10 per cent.

The *pupil* is at least four times as important as the schoolhouse with all its equipment. In the final issue the unfolding process of education can be successful only when there is something worth while to unfold.

Here again the teacher can not choose his material. He must take the raw human stuff as it comes to him to make the best of it. I thoroughly believe, however, that we shall soon come to recognize more than we do now the fact that the far-sighted way to get the best educational results is to provide the teacher with better pupils at the start, or, in other words, with pupils having greater inborn capacities. This, of course, is applied eugenics. At present the average educator is swamped so immediately with boys and girls already born and thus having their innate capacities irretrievably determined, that he hardly has time or opportunity to raise his eyes to that larger ideal of theoretical unborn children which so stirs the imagination of the eugenist. Granting that the ordinary pupil reckons at 40 per cent., surely the *teacher* should be valued at, at least, 30 per cent. of the educational complex, that is, at three times the value of the material equipment with its administration.

The value of the teacher is particularly emphasized in our American schools where educational schemes are so varied and empirical and where so much depends upon the execution of the scheme. A good teacher can make even a faulty scheme succeed, but a poor techer may confuse and upset things generally, although provided with the best of schemes.

It is not proposed to-day, however, to open the embarrassing personal question of how better teachers may be obtained, but, having recognized their importance in the educational system, to pass on to the fourth phase of our common problem, the *plan*, or content of our work. It is a good thing that our plans are not fixed forms from the outside and that we teachers repeatedly apply ourselves with diligence to their revision.

So far as the subject of biology in the

[1] An address given before the science section of the Worcester County Teachers' Association at Worcester, November 5, 1915.

high schools is concerned, in spite of its prime importance, its status, particularly in conservative New England, is by no means clear.

At the present time it is frequently true that the biological course of the average high school has a strong resemblance to hash. To speak plainly, it too often consists of warmed-up left-overs, for example, a little nature study from the grades, some large indigestible chunks of college zoology, a dash of elementary physics and chemistry, a little botany and hygiene, and, in certain states where required by law, an intemperate dose of temperance.

Now hash, correctly compounded and browned in the pan, requires no apology, but we all have a pardonable interest in what goes into it, hence this inquiry into the content of high-school biology.

At the July meeting of the National Education Association in 1913 with the cooperation of Mr. Claxton, the U. S. Commissioner of Education, an important national commission on the reorganization of secondary education was appointed, in the hope that it would, among other things, "formulate statements of valid aims, efficient methods and kinds of material whereby each subject may best serve the needs of high-school pupils." This commission was organized into 14 committees and numerous subcommittees. Mr. William Orr, the deputy state commissioner of education of Massachusetts, was made chairman of the committee on natural science and he very soon organized his department into five subcommittees, one of which, that of biology, had in its personnel ten high-school teachers, three university professors, three normal-school instructors and one physician. The seventeen members comprising this committee, coming as they do from New York and vicinity, from Chicago and the middle west, from the Pacific coast and from New England, are fairly representative of the country at large.

Under the leadership of Mr. James E. Peabody, chairman, of the Morris High School, New York City, this subcommittee on biology has had numerous conferences during the last two years and is still wrestling with its uncompleted task. A final report is not yet ready, but a preliminary draft has been published in which certain conclusions have been reached, and I wish to present to you some features of this tentative statement in the hope that constructive criticism may be called forth which may aid in the formulation of the final report as well as in clarifying our ideas generally about the aims and content of high-school biology.

First. *"Fundamental Principles."* To quote from the preliminary report,

> The committee maintains that *unity of subject matter in any course in science is of first importance*, by which is meant that the subject matter should be so organized that appreciation of *underlying principles* shall form the foundation of the student's knowledge, thus giving him a scientific basis for the organization of his knowledge.

This concept of *"unity of subject-matter"* immediately differentiates biological science of the secondary school from the nature-study which is supposed to precede it in the grades.

Hitherto the attention of the well-trained child has been engaged, and diverted with many varied aspects of the living things more or less unrelated as they may happen to be incidentally encountered. Now Mother Nature is an exceedingly entertaining, instructive and edifying companion, as Gilbert White well knew, but we must all confess that she is hopelessly illogical in the way that her materials are distributed throughout the earth and that she almost entirely lacks any bump of order. When the pupil reaches high-school age, his mind begins to crave and appreciate the orderly

sequence of facts and ideas which constitutes the science of biology as contrasted with the hit-or-miss art of nature study. It is a keen intellectual delight for him to create out of the scattered blocks of familiar facts a building of ideas whose architecture gives mental satisfaction. This is why "underlying principles" and "unity of subject-matter" begin to make their definite appeal to the unfolding mind at the high-school age. The psychological moment has arrived for replacing disconnected excursions and picnics in the pleasant fields of natural phenomena with the laborious straight furrows of scientific husbandry, hence the committee stands, first of all, for *fundamental principles* and for a *unity of subject-matter*.

It follows from the foregoing that courses in so-called "general science" for the first year in high school would not receive the indorsement of this committee since, in the very nature of the case, such courses can not deal with a unified subject-matter. They must consist necessarily of fragments of various sciences superficially treated, with the result that the furrows thus plowed in the field of knowledge are all so short, divergent and interrupted that they lead nowhere with definiteness. The committee's report formulates the aims of teaching biology as follows: "(1) to train the pupil in observation and reasoning; (2) to acquaint him with his environment and with common forms of plant and animal life, and especially with the structure, functions and care of his own body, together with the general biological principles derived from this study; and (3) to show him his place in nature and his share of responsibility for the present and future of human society."

These aims may be ticketed under five heads:

1. Research
2. Information
3. Prophylaxis
4. Orientation
5. Application

In review I wish to pass briefly these five aims for teaching high-school biology.

I. *Research*, or "training in observation and reasoning," is a method of procedure that has become one of the greatest instruments at the command of the human mind. President Bumpus, of Tufts College, has recently defined research as "finding out things for yourself at first hand." There is nothing obscure or uncanny about the scientific method of research. Anybody can engage in it, but not every one habitually does so. It is often easier, if one has a slothful mental attitude, to rely upon the authority of others in getting the answer to life's problems, than to replace the passive acceptance of ready-made ideas with independent and resourceful conclusions based upon research.

II. The second aim, *information*, is the necessary ballast in any course of study. I believe that young minds require a whole lot of it, just as young robins will thrive best when they have literally yards of worms inserted into their cavernous throats. What if the pupil does forget a large part of the information that comes his way? It is a good thing to do so and it may be reasonably expected to occur with the average pupil. The young robins just cited do not retain the great amount of worms they devour, but in the process of getting rid of them they grow visibly. So a pupil will grow in intellectual capacity and power in the process of passing information through his central nervous system, and it is well for him to cultivate the habit of doing so. A large part of the high-school course in biology, consequently, should be informational in character and administered in good, stiff, honest doses with a minimum penalty applied if inquisitorial tests and

examinations reveal that much of the information engulfed refuses to emerge.

III. By *prophylaxis* is meant personal application to the pupil's own body and life of those hygienic measures taught by biology which will prevent inefficient living on his part. The importance of this aim is so obvious that it calls for no defence, but I wish to quote a well-expressed paragraph from Professor Winslow's Buffalo address given last year before the Fourth International Congress of School Hygiene.

> It is an obvious truism that education is meant to prepare for living; it seems clear that the most general and fundamental phases of the art of life should receive proportionate representation in the preparatory process. The average man uses his history once a day perhaps, his arithmetic somewhat oftener. Even his English grammar is on trial during a part of his working hours only, and his whole mental equipment is put by for a third of the twenty-four. He is *living* all the time, however, and is either well or ill, happy or miserable, efficient or useless, largely as a result of the conduct and management of the delicate physical machine which is in his charge. He may be innocent of historic fact, of the multiplication table and of syntax and yet be a useful and a contented citizen. He can not be either long without observing the laws of hygiene and sanitation. I fancy that any one with a child of his own will have no doubt that knowledge of what to eat and what not to eat and why, of the meaning and importance of fresh air, of the claims of exercise and rest, of the essential routine of body cleanliness, of how germ diseases are spread and how they may be controlled, of the methods of rendering water and milk safe and the reasons therefor, of the dangers of insect-borne diseases and of the essentials of public sanitation, these are of even greater moment than those which prepare for the intellectual and social life.

IV. *Orientation*, or a "knowledge of general biological principles that underlie these studies" is the fourth aim in teaching biology in secondary schools. Only when the pupil senses the larger values and has his imagination correspondingly stimulated will he enter upon detailed work with the blessed enthusiasm of the true scholar. By these larger values of orientation is meant something more than appreciation of the practical applications of biology to life. They include an unshakable confidence in underlying truth and in the orderly sequence of events, which unconsciously permeates and characterizes the scientific mind. It is the lack of appreciating these larger and underlying principles that renders any subject petty, stupid and "dry" so that aggressive interest gives way to neutral acquiescence. It is the unoriented pupil who asks the discouraged teacher that most exasperating of all questions: "What do you want me to do next?"

High-school pupils are old enough to appreciate being taken behind the scenes and shown what the whole thing is about. As soon as they once gain a panoramic view of the great field of biological science their study ceases to be a personally conducted excursion and resolves itself into a real adventure that is worth while.

V. Finally, the *application* of it all is "to show him his place in nature and his share and responsibility for the present and future of human society." The moral of the whole matter is to get rid of the rubbish in life so far as possible by rational behavior and effective conduct. Proper training in biology will do more than safeguard the individual against personal blunders in the conduct of his own life, because it stands for more than the simple acquisition of information and skill for selfish ends alone. It has to do with the discernment of truth and error, with the unconscious habit of correct judgment of cause and effect *independent of any personal bias*.

This unselfish, impersonal attitude of mind which true biological study engenders is exactly what we want for making good citizens in the world. In such a scientific atmosphere prejudice, ignorance, greed and

passion do not flourish, and it is in the development of this atmosphere rather than in the more obvious, utilitarian benefits of biological knowledge that the greatest application of our science to human welfare is to be found. So much for the aims and ideals in teaching biology in the secondary schools.

The report goes on to affirm:

We do not believe in rigidity of method in science instruction. Quizzes, conferences, experiments, individual reports, excursions, text-assignments are all good. They offer a rich and varied choice of pedagogical method, and each teacher should be given freedom to develop the methods best adapted to his own group of students and to the environment of the school in which he is teaching.

In laboratory work time should not be wasted in detailed microscopical work, in complicated experimentation, in useless attention to drawing or other "busy work." All laboratory work should be based on definite information ungrudgingly and interestingly furnished, and should be in the nature of a direct effort to acquire more knowledge at first hand. Experiments, results and conclusions should be accurately recorded. Neatness in notebook records is desirable but must not be exalted above thinking and understanding.

With respect to how the work should be planned the committee unanimously agrees that *two years of work in elementary science* should be the basis for more advanced courses in science. Such work should deal with physical environment (including a study of matter and forces), plants, animals (including man), and the general applications of scientific principles to human welfare. If, however, administrative conditions make a two-year course out of the question, the committee recommends that a first-year course be required of all, and that a second year be offered as an elective.

There are added in the preliminary report four appendices in which tentative outlines of the content of each of the four half years recommended are given.

In part these appendices are as follows:

APPENDIX A. PHYSICAL ENVIRONMENT

This study should acquaint the pupil with the nature of his environment and emphasize the necessity for his adjustment to it.

1. *States of Matter.*

2. *Water.*—Changes under different temperature; evaporation; condensation; distribution; the ocean as a modifier of climate; winds, currents, rainfall; solution, precipitation, filtration; carrying power; water power; steam power; action in modifying the earth's surface; ice, snow and hail; circulation of ground water; water in living things; osmosis.

3. *Air.*—Physical features; elements, compounds, chemical changes; oxidation; photosynthesis; indestructibility of matter; the CO_2 cycle; forces of heat, light and electricity.

4. *Soil.*—Origin; nature; its constant changes, soil bacteria; the materials for plant growth.

5. *The Past History of the Earth.*—Forces preparing an environment for mankind; geography of to-day; man's relation to it.

6. *Environment Extended to the Limits of Space.*—The heavenly bodies and their effect on the earth; fixed stars and the sources of our knowledge of them; the solar system.

7. *Summary of the Relation of the Physical Environment and Life to Show the Responsibility of Man.*—The conservation of natural resources. In this preliminary half year on the physical environment the stage is set for the biological studies proper that follow.

APPENDIX B. PLANTS

1. *Introductory.*—The general relations of plants to animals and man; a consideration of the familiar parts of a typical green plant with the functions of these parts.

2. *Nutrition.*—The essentials obtained through a study of roots, stem and leaves. Nutritive processes in plants that are not green.

3. *Reproduction*, the essentials obtained through a study of flowers, fruits and seeds.

4. *Applications* of plant biology to human welfare.

5. *Survey of plant groups*, and plant identifications.

APPENDIX C. ANIMALS

1. *Animals in General.*—Types, structure, distribution and relationships.

2. *Life Histories.*—Reproduction, growth, metamorphosis.

3. *Response to Physical Environment.*—Geographic distribution, reactions.

4. *Response to Organic Environment.*—Competition, parasitism, symbiosis.

5. *The Continuity of Life.*—Genetic relationship, the paleontological record.

6. *Man's Place in Nature.*—His rise and dominance; his distribution and variety.

7. *Man's Opportunity to Use His Biological Knowledge.*—Medicine, sanitation, agriculture; domestication and control of animal life.

APPENDIX D. MAN

1. *Structure of the Human Body.*—Similarity and contrasts with the lower animals. Characteristics of the most common tissues.

2. *Physiology.*—Nutrition, food and diet; digestion, absorption; distribution of food in the body; removal of waste; the part played by oxygen. Functions of the tissues.

3. *Hygienic Care of the Body.*—Healthful diets; drugs and stimulants; prevention of constipation; exercise and rest; clothing; cleanliness; first aid to the injured; special hygiene of eyes, ears, nose and throat.

4. *Bacteria and Sanitation.*—General characteristics of bacteria, distribution, form, size, reproduction and conditions of growth; food preservation, soil inoculation and disease prevention. Public health; care of streets, water supply, sewage disposal, milk and inspection of foods, quarantine, disinfection and methods of securing immunity.

It is hoped in the final report to include various syllabi of courses in biology which have proved successful, but the committee feels that at present it is more desirable to gain greater uniformity and agreement in the aims and purposes of biological study in the secondary schools than in the content of the courses themselves. Given a pupil of normal capacity, it is of greater moment to have a teacher imbued with high ideals and aims, with a reasonably good preliminary training and endowed with the indispensable gift of gumption, than it is to have a definite program of topics outlined in the curriculum. In fact it would be disastrous to all future educational growth if we should ever reach such a degree of standardized efficiency in our plans and programs of study that we could be content to rest upon our laurels.

H. E. Walter
Brown University

THE VALUE OF COLLEGE HONORS

Among the motives which induce men to effort and achievement the desire for distinction is not the highest, perhaps, but neither is it the lowest nor the least effective. Some people work for money, some for the good of man, and some for the glory of God; but all of them, except possibly the best and the worst, desire the respect of their fellows, and find the mark and sign of it both gratifying and encouraging. Craftsmen and artists, authors and preachers, scholars and statesmen, may do their best for love of their work, and not for any other reward, but it is noteworthy how much they prize a word of praise, an honorable mention, a burst of applause, an office in a learned society, and all the other marks of appreciation that come to those who have an honorable reputation and a good name. Soldiers who fight for their native land are not thinking all the time of glory and the honors of war; but the fact that distinguished service may be recognized by promotion and decoration is an incentive that no military leader affects to despise. Socialists often say that when the inducement of private profit shall have been taken away in the socialist state, the desire for honor will remain as one of the strongest motives to human endeavor for the common good.

In this respect college students are not different from older and wiser men. There are those among them who give themselves to study from a sense of duty, for the love of learning, or for the sake of discipline and training; but even these are encouraged and sustained by the approval of their instructors and the respect of their fellow-students. Notwithstanding the allurements of society, sport and other side lines of college life, the chief work of the college is the promotion of scholarship, and students who give their time and talents to that end have a right to the highest recognition and honor

that the college can give. To deny them that is to put scholarship at a discount and to defeat the chief purpose for which the college exists.

It is often said by those who oppose the granting of college honors that it substitutes an artificial reward for the natural interest which good students take in their work. To this it may be replied that the desire for honor is as natural as the love of study, and that it supplies an additional and powerful motive which many, if not all, of the finest scholars need to induce them to do their best work. Moreover, in every sphere of life honors are the natural and just reward of effort and service.

It is also said that honors appeal to a small fraction of the students only, the very class who do not need the stimulus. As a matter of fact, however, a considerable per cent. of the students in our colleges work for membership in the Phi Beta Kappa Society and for other scholarship honors; and still more would enter the lists, if scholarship were more highly esteemed as compared with other things. The neglect of learning will not be remedied by the doing away with scholarship honors, but rather by the improvement of the system so that it may appeal to a larger number of students.

Some object to the granting of honors because it engenders rivalry and hard feeling between the contestants; but all other student activities have the same effect. Besides, a healthy rivalry is good, notwithstanding the natural disappointment of those who fail to reach the higher places. Some say that it is undemocratic to recognize distinctions between men; but to say that is to stand for mediocrity, the most insidious foe of true democracy. Nothing is more unjust, as Plato well says, than the equal treatment of unequals.

A more plausible argument against the granting of scholarship honors is that academic distinction is no criterion of real ability, and no indication of probable success in after life. This old fallacy has been so often refuted that it should be utterly discredited by this time. One of the most recent investigations of the question has been made by Professor Frank W. Nicolson, of Wesleyan University, who has found that for his college, at least,

> the chances of distinction for a high honor graduate are just even; that one out of every three elected to Phi Beta Kappa is likely to achieve pronounced success in after life; and that each of the remaining members of the class has less than one chance in ten to become famous.

The present writer knows of only three fairly strong arguments against the granting of college honors. In the first place, the stimulus is sometimes so great as to cause ambitious students to injure their health and thus unfit themselves for their after life. Such excess in study, however, is rare among the students of the present generation.

Secondly, the desire for honors frequently induces students to take easy courses or to choose instructors who give high grades. This is a strong argument in favor of establishing proper standards of good work, confessedly a difficult task in any college.

Thirdly, a candidate for honors is likely to neglect important work, such as collateral reading not bearing directly upon the examinations. This, again, is not a condemnation of honors in themselves, but a criticism of certain examinations, which are based upon the cramming of text-books rather than upon broad knowledge and independent thought.

Altogether, the weight of argument is decidedly in favor of college honors, and this opinion is confirmed by the answers to a questionnaire lately sent to the deans of 68 of the leading colleges in the United States and Canada. Replies were received

from 52 colleges. The questions were as follows:

First. Do you regard the granting of honors or other distinctions as tending to improve scholarship?

Second. (*a*) Is there any system of honors or honor courses in your university?

(*b*) If so, do you grant honors for high general standing or for specialized work, or both?

Third. What are the chief advantages and disadvantages of your system or honors?

In reply to the first question, 34 answered yes; 4 answered no; 2 were doubtful; and 12 expressed no definite opinion.

The answers to the second question were indefinite in some cases, so it was necessary to supplement the information by reference to the college catalogues; and it was found that 38 out of the 52 colleges had chapters of the Phi Beta Kappa Society; 7 had some other honors system; and 7 granted no honors at all, or it was not stated whether they did or not. Of the 38 colleges which had the Phi Beta Kappa Society, 28 granted some other kind of honors also. Of the 45 colleges having some kind of an honors system, 24 granted honors for general standing only; 3 granted honors for specialized work only; and 18 granted honors for both general standing and specialized work. In no case was there any hint of abandoning the giving of honors, but in several cases mention was made of proposals to establish an honors system or to extend the system already in existence.

In answer to the third question a number of interesting replies were received, but there was little criticism of the general principle that scholarship should be given some kind of public recognition.

The following are typical examples of the opinions expressed:

Our experience has established the fact that a very few students, men of more than average ability and industry, do find the granting of honors an incentive. Yet I find it difficult to believe that the Phi Beta Kappa Society has improved conditions for scholarly work in my own college.

Dean James P. Porter,
Clark College

The university established a system of honors three years ago, but the results derived from it have not been very satisfactory. It has driven students to the election of easy subjects, or more especially to the subjects where the professors grade high.

Professor G. E. Ripley,
Acting Dean,
University of Arkansas

I doubt if any one would attempt to measure the degree of improvement gained by this practise, but it seems to be valued by the students as a desirable distinction.

Dean K. C. Babcock,
University of Illinois

The advantage of such a system seems to be that it offers something definite to the ambitious student. The system of extra work outside the ordinary class work stimulates a bright student and brings to the surface what he often does not know himself is within him.

President A. Stanley Mackenzie,
Dalhousie University

We regard this system as one of the most distinctive and most valuable features of our educational system.

President Robert A. Falconer,
University of Toronto

All such systems encounter the possible danger of substituting the factitious interest in the prizes for genuine interest in scholarship. At the same time, I think there is no question that the amount of actual hard work which results from our practise is appreciably greater than that which would be the case without such honors.

Dean James R. Angell,
University of Chicago

We believe that the granting of honors and other distinctions is a distinct encouragement to better scholarship.

Dean T. S. Jones,
Yale University

It has always been my personal opinion that the granting of honors and other distinctions tends to improve scholarship, for youths, like men, like to have their good work known and appreciated.

Dean B. S. Hurlbut,
Harvard College

The failure to recognize in some way work well done may discourage him who would otherwise be led on to higher and higher effort and attainment. There is quite as great a possibility of injustice in the withholding as in the granting of recognition, and the consequences may be even worse.

DEAN ELLERY W. DAVIS,
University of Nebraska

I believe that election to Phi Beta Kappa is regarded as the greatest distinction that a man at Bowdoin can win, and that it is a distinct spur to scholarship. We have also found that here, as elsewhere, the high honor men are more likely to be successful in after life than others.

DEAN KENNETH C. M. SILLS,
Bowdoin College

If students may win distinctions of various kinds in athletics and other activities which are merely incidental to the college course, it seems fitting that some special recognition should be given to those students who excel in those things which are the chief business of a college.

DEAN HORACE A. HOFFMAN,
University of Indiana

In view of all the evidence which the writer has obtained on this subject, he considers it established that the honors systems which now exist in American colleges, including, of course, that of the Phi Beta Kappa Society, are producing good results in the promotion of scholarship. It is safe to say, too, that any falling off in scholarly ambition that may have been observed has been due, not to the granting of honors for scholarship, but to the competing attractions of society, sport and other activities of college life. The improvement of scholarship, therefore, must be secured, not by refusing distinction to capable and earnest students, but by encouraging them in every legitimate way to follow the hard road to learning, until they find, sooner or later, that learning, like virtue, is its own reward.

As to the policy that should be adopted by a given college, that depends so much upon tradition, custom and particular circumstances, that no general rules can be laid down. The experiments of several colleges, notably Harvard, Yale, Columbia and Princeton, are well worth careful study, but every college must work out the problem in its own way. Perhaps in the end some sort of uniformity will be attained, but any method is likely to be successful which is based on the sound principle of giving honor to whom honor is due.

J. E. LE ROSSIGNOL
UNIVERSITY OF NEBRASKA

EDUCATION ACCORDING TO RUSKIN

II

ALTHOUGH the moral and religious elements are of supreme consequence, yet there are other special elements and forces which are preeminent. Fifty years ago Mr. Ruskin distinguished the sense and half-sense of so-called practical education. In this interpretation he also has much to say respecting manual training and trade schools. What he wrote fifty years ago is apt for the present time.

In order that men may be able to support themselves when they are grown, their strength must be properly developed while they are young; and the state should always see to this—not allowing their health to be broken by too early labour, nor their powers to be wasted for want of knowledge. Some questions connected with this matter are noticed farther on under the head of "trial schools"; one point I must notice here, that I believe all youths of whatever rank ought to learn some manual trade thoroughly; for it is quite wonderful how much a man's views of life are cleared by the attainment of the capacity of doing any one thing well with his hands and arms. For a long time, what right life there was in the upper classes of Europe depended in no small degree on the necessity which each man was under of being able to fence; at this day, the most useful things which boys learn at public schools, are, I believe, riding, rowing, and cricketing. But it would be far better that members of Parliament should be able to plough straight, and make a horseshoe, than only to feather oars neatly or point their toes prettily in stirrups. Then, in literary and scientific teaching, the great point of economy is to give the discipline of it through the knowledge which will im-

mediately bear on practical life. Our literary work has long been economically useless to us because too much concerned with dead languages; and our scientific work will yet, for some time, be a good deal lost, because scientific men are too fond or too vain of their systems, and waste the student's time in endeavoring to give him large views, and make him perceive interesting connections of facts; when there is not one student, no, nor one man in a thousand, who can feel the beauty of a system, or even take it clearly into his head; but nearly all men can understand, and most will be interested in, the facts which bear on daily life. Botanists have discovered some wonderful connection between nettles and figs, which a cow-boy who will never see a ripe fig in his life need not be at all troubled about; but it will be interesting to him to know what effect nettles have on hay, and what taste they will give to porridge; and it will give him nearly a new life if he can be got but once, in a spring-time, to look well at the beautiful circlet of the white nettle blossom, and work out with his school-master the curves of its petals, and the way it is set on its central mast. So, the principle of chemical equivalents, beautiful as it is, matters far less to a peasant boy, and even to most sons of gentlemen, than their knowing how to find whether the water is wholesome in the back-kitchen cistern, or whether the seven-acre field wants sand or chalk.

Having, then, directed the studies of our youth so as to make them practically serviceable men at the time of their entrance into life, that entrance should always be ready for them in cases where their private circumstances present no opening. There ought to be government establishments for every trade, in which all youths who desired it should be received as apprentices on their leaving school; and men thrown out of work received at all times. At these government manufactories the discipline should be strict, and the wages steady, not varying at all in proportion to the demand for the article, but only in proportion to the price of food; the commodities produced being laid up in store to meet sudden demands, and sudden fluctuations in prices prevented:—that gradual and necessary fluctuation only being allowed which is properly consequent on larger or more limited supply of raw material and other natural causes. When there was a visible tendency to produce a glut of any commodity, that tendency should be checked by directing the youth at the government schools into other trades; and the yearly surplus of commodities should be the principal means of government provision for the poor.[31]

The principles thus laid down are indeed timely for the present conditions in America and in the world.

Upon another side also of current problems our author has light to shed, to wit, vocational guidance:

It is difficult to analyse the characters of mind which cause youths to mistake their vocation, and to endeavour to become artists, when they have no true artist's gift. But the fact is, that multitudes of young men do this, and that by far the greater number of living artists are men who have mistaken their vocation. The peculiar circumstances of modern life, which exhibit art in almost every form to the sight of the youths in our great cities, have a natural tendency to fill their imaginations with borrowed ideas, and their minds with imperfect science; the mere dislike of mechanical employments, either felt to be irksome, or believed to be degrading, urges numbers of young men to become painters, in the same temper in which they would enlist or go to sea; others, the sons of engravers or artists, taught the business of the art by their parents, and having no gift for it themselves, follow it as the means of livelihood, in an ignoble patience; or, if ambitious, seek to attract regard, or distance rivalry, by fantastic, meretricious, or unprecedented applications of their mechanical skill; while finally, many men earnest in feeling, and conscientious in principle, mistake their desire to be useful for a love of art, and their quickness of emotion for its capacity, and pass their lives in painting moral and instructive pictures, which might almost justify us in thinking nobody could be a painter but a rogue. On the other hand, I believe that much of the best artistical intellect is daily lost in other avocations. Generally, the temper which would make an admirable artist is humble and observant, capable of taking much interest in little things, and of entertaining itself pleasantly in the dullest circumstances. Suppose, added to these characters, a steady conscientiousness which seeks to do its duty wherever it may be placed, and the power, denied to few artistical minds, of ingenious invention in almost any practical department of human skill, and it can hardly be doubted that the very humility and conscientiousness which would have per-

[31] "Laws of Fésole," cabinet edition, Dana Estes & Co., p. 224.

fected the painter, have in many instances prevented his becoming one; and that in the quiet life of our steady craftsmen—sagacious manufacturers, and uncomplaining clerks—there may frequently be concealed more genius than ever is raised to the direction of our public works, or to be the mark of our public praises.[32]

Yet in all such vocational guidance, in training for trades, and in all types of manual education, it is to be remembered that these arts are expression of mind. Manual training is really cerebral training. With the cerebral training is to be united also ethical training.

. . . The manual arts are as accurate exponents of ethical state, as other modes of expression; first, with absolute precision, of that of the workman, and then with precision, disguised by many distorting influences, of that of the nation to which he belongs.[33]

For all these manual endeavors it is to be remembered that the higher academic ideals have value. Mr. Ruskin says:

To which good end, it will indeed contribute that we add some practice of the lower arts to our scheme of University education; but the thing which is vitally necessary is, that we should extend the spirit of University education to the practice of the lower arts.[34]

Indeed art and scholarship are never to be separated.

What art may do for scholarship, I have no right to conjecture; but what scholarship may do for art, I may in all modesty tell you. Hitherto, great artists, though always gentlemen, have yet been too exclusively craftsmen. Art has been less thoughtful than we suppose; it has taught much, but much, also, falsely. Many of the greatest pictures are enigmas; others, beautiful toys; others harmful and corrupting toys. In the loveliest there is something weak; in the greatest there is something guilty. And this, gentlemen, if you will, is the new thing that may come to pass,—that the scholars of England may resolve to teach also with the silent power of the arts; and that some among you may so learn and use them, that pictures may be painted which shall not be enigmas any more, but open teachings of what can not otherwise be so well shown; which shall not be fevered or broken visions any more, but shall be filled with the indwelling light of self-possessed imagination; which shall not be stained or enfeebled any more by evil passion, but glorious with the strength and chastity of noble human love; and which shall no more degrade or disguise the work of God in heaven, but testify of Him as here dwelling with men, and walking with them, not angry, in the garden of the earth.[35]

In Mr. Ruskin's conception of education the training of the workingman plays a significant part. The lastingness of his relation to the popular movement to this end is embodied at the present time in what is known as Ruskin College at Oxford, an independent foundation, and one which seeks to carry out his purposes by his methods.

At this point emerges the opinion of the author of Queens' Gardens on the education of women. His conception of what the education of women should be arises from his conception of woman's nature itself. Of this nature in contrast with the nature of man he says:

The man's power is active, progressive, defensive. He is eminently the doer, the creator, the discoverer, the defender. His intellect is for speculation and invention; his energy for adventure, for war, and for conquest, wherever war is just, wherever conquest necessary. But the woman's power is for rule, not for battle,—and her intellect is not for invention or creation, but for sweet ordering, arrangement and decision. She sees the qualities of things, their claims and their places. Her great function is Praise; she enters into no contest, but infallibly judges the crown of contest. By her office, and place, she is protected from all danger and temptation. The man, in his rough work in open world, must encounter all peril and trial:—to him, therefore, the failure, the offence, the inevitable error: often he must be wounded, or subdued, often misled, and *always* hardened. But

[32] "Laws of Fésole," cabinet edition, Dana Estes & Co., p. 229.

[33] "St. Mark's Rest," cabinet edition, Dana Estes & Co., p. 242.

[34] "St. Mark's Rest," cabinet edition, Dana Estes & Co., p. 199.

[35] "St. Mark's Rest," cabinet edition, Dana Estes & Co., p. 320.

he guards the woman from all this; within his house, as ruled by her, unless she herself has sought it, need enter no danger, no temptation, no cause of error or offence. This is the true nature of home—it is the place of Peace; the shelter, not only from all injury, but from all terror, doubt, and division. In so far as it is not this, it is not home: so far as the anxieties of the outer life penetrate into it, and the inconsistently-minded, unknown, unloved, or hostile society of the outer world is allowed by either husband or wife to cross the threshold, it ceases to be home; it is then only a part of that outer world which you have roofed over, and lighted fire in. But so far as it is a sacred place, a vestal temple, a temple of the hearth watched over by Household Gods, before whose faces none may come but those whom they can receive with love,—so far as it is this, and roof and fire are types only of a nobler shade and light,—shade as of the rock in a weary land, and light as of the Pharos in the stormy sea;—so far it vindicates the name, and fulfils the praise, of home.

And whenever a true wife comes, this home is always round her. The stars only may be over her head; the glow-worm in the night-cold grass may be the only fire at her foot: but home is yet wherever she is; and for a noble woman it stretches far round her, better than ceiled with cedar, or painted with vermilion, shedding its quiet light far, for those who else were homeless.

This, then, I believe to be,—will you not admit it to be,—the woman's true place and power? But do not you see that to fulfil this, she must—as far as one can use such terms of a human creature—be incapable of error? So far as she rules, all must be right, or nothing is. She must be enduringly, incorruptibly good; instinctively, infallibly wise—wise, not for self-development, but for self-renunciation: wise, not that she may set herself above her husband, but that she may never fail from his side: wise, not with the narrowness of insolent and loveless pride, but with the passionate gentleness of an infinitely variable, because infinitely applicable, modesty of service—the true changefulness of woman. In that great sense—"La donna e mobile," not "Qual piûm al vento"; no, nor yet "Variable as the shade, by the light quivering aspen made"; but variable as the *light*, manifold in fair and serene division, that it may take the color of all that it falls upon, and exalt it.[36]

[36] "Sesame and Lilies," cabinet edition, Dana Estes & Co., p. 86.

Upon this interpretation of woman's nature he bases his conception of woman's education and of this he says at length:

The first of our duties to her—no thoughtful persons now doubt this,—is to secure for her such physical training and exercises as may confirm her health, and perfect her beauty, the highest refinement of that beauty being unattainable without splendor of activity and of delicate strength. To perfect her beauty, I say, and increase its power; it cannot be too powerful, nor shed its sacred light too far: only remember that all physical freedom is vain to produce beauty without a corresponding freedom of heart. . . .

"*Vital* feelings of delight," observe. There are deadly feelings of delight; but the natural ones are vital, necessary to very life.

And they must be feelings of delight, if they are to be vital. Do not think you can make a girl lovely, if you do not make her happy. There is not one restraint you put on a good girl's nature—there is not one check you give to her instincts of affection or of effort—which will not be indelibly written on her features, with hardness which is all the more painful because it takes away the brightness from the eyes of innocence, and the charm from the brow of virtue.

This for the means: now note the end. Take from the same poet, in two lines, a perfect description of womanly beauty—

> "A countenance in which did meet
> Sweet records, promises as sweet."

The perfect loveliness of a woman's countenance can only consist in that majestic peace, which is founded in the memory of happy and useful years, —full of sweet records; and from the joining of this with that yet more majestic childishness, which is still full of change and promise;—opening always—modest at once, and bright, with hope of better things to be won, and to be bestowed. There is no old age where there is still that promise,—it is eternal youth.

Thus, then, you have first to mould her physical frame, and then, as the strength she gains will permit you, to fill and temper her mind with all knowledge and thoughts which tend to confirm its natural instincts of justice, and refine its natural tact of love.

All such knowledge should be given her as may enable her to understand, and even to aid, the work of men: and yet it should be given, not as

knowledge,—not as if it were, or could be, for her an object to know; but only to feel, and to judge. It is of no moment, as a matter of pride or perfectness in herself, whether she knows many languages or one; but it is of the utmost, that she should be able to show kindness to a stranger, and to understand the sweetness of a stranger's tongue. It is of no moment to her own worth or dignity that she should be acquainted with this science or that; but it is of the highest that she should be trained in habits of accurate thought; that she should understand the meaning, the inevitableness, and the loveliness of natural laws, and follow at least some one path of scientific attainment, as far as to the threshold of that bitter Valley of Humiliation, into which only the wisest and bravest of men can descend, owning themselves forever children, gathering pebbles on a boundless shore. It is of little consequence how many positions of cities she knows, or how many dates of events, or how many names of celebrated persons—it is not the object of education to turn a woman into a dictionary; but it is deeply necessary that she should be taught to enter with her whole personality into the history she reads; to picture the passages of it vitally in her own bright imagination; to apprehend, with her fine instincts, the pathetic circumstances and dramatic relations, which the historian too often only eclipses by his reasoning, and disconnects by his arrangement: it is for her to trace the hidden equities of divine reward, and catch sight, through the darkness, of the fateful threads of woven fire that connect error with its retribution. But, chiefly of all, she is to be taught to extend the limits of her sympathy with respect to that history which is being for her determined, as the moments pass in which she draws her peaceful breath: and to the contemporary calamity which, were it but rightly mourned by her, would recur no more hereafter. She is to exercise herself in imagining what would be the effects upon her mind and conduct, if she were daily brought into the presence of the suffering which is not the less real because shut from her sight. She is to be taught somewhat to understand the nothingness of the proportion which that little world in which she lives and loves, bears to the world in which God lives and loves; —and solemnly she is to be taught to strive that her thoughts of piety may not be feeble in proportion to the number they embrace, nor her prayer more languid than it is for the momentary relief from pain of her husband or her child, when it is uttered for the multitudes of those who have none to love them,—and is, "for all who are desolate and oppressed."[37]

Despite the diversity of interpretation of things educational, Mr. Ruskin does write of the value of certain special studies. Among them he is inclined to give a high place to logic. In his great early work he refers in more than one place to this subject.

Next to imagination, the power of perceiving logical relation is one of the rarest among men; certainly, of those with whom I have conversed, I have found always ten who had deep feeling, quick wit, or extended knowledge, for one who could set down a syllogism without a flaw; and for ten who could set down a syllogism, only one who could *entirely* understand that a square has four sides.[38]

But, as I have already intimated, Mr. Ruskin has a lower opinion of the value of the sciences in education than he has of logic and of literature. No love is lost between him and the scientist. In the year 1884, he writes:

The scientists slink out of my way now, as if I was a mad dog, for I let them have it hot and heavy whenever I've a chance at them.[39]

For Darwin in his "Descent of Man" he has small use. He seeks to controvert Darwin's methods and to oppose some of his conclusions. Mr. Ruskin's interpretations in science are to be received as of slight worth. But he does believe in the value of local natural history as a means of training students. He says:

Thus, in our simplest codes of school instruction, I hope some day to see local natural history assume a principal place, so that our peasant children may be taught the nature and uses of the herbs that grow in their meadows, and may take interest in observing and cherishing, rather than in hunting or killing, the harmless animals of their country. Supposing it determined that this local

[37] "Sesame and Lilies," cabinet edition, Dana Estes & Co., p. 88.

[38] "Modern Painters," Vol. III., cabinet edition, Dana Estes & Co., p. 13.

[39] "Hortus Inclusus," cabinet edition, Dana Estes & Co., p. 60.

natural history should be taught, drawing ought to be used to fix the attention, and test, while it aided, the memory. "Draw such and such a flower in outline, with its bell towards you. Draw it with its side towards you. Paint the spots upon it. Draw a duck's head—her foot. Now a robin's, —a thrush's,—now the spots upon the thrush's breast." These are the kind of tasks which it seems to me should be set to the young peasant student.[40]

It is also good to be able to say that the teaching of English our author regards as a mighty force in education. It is a happy condition that one whose books have become standard texts as examples of good English and as means for the teaching of English should include, in the content of education, composition in English, and in other languages. A school of literature he would found which should be occupied largely with human emotion and history. The human emotion should normally be found in literature. Mr. Ruskin says:

There are attractive qualities in Burns, and attractive qualities in Dickens, which neither of those writers would have possessed if the one had been educated, and the other had been studying higher nature than that of cockney London; but those attractive qualities are not such as we should seek in a school of literature. If we want to teach young men a good manner of writing, we should teach it from Shakespeare,—not from Burns; from Walter Scott,—and not from Dickens.[41]

The value of drawing is constantly referred to under divers forms, and with great emphasis in all of Mr. Ruskin's works. I might refer to many pages, but I content myself with the simple declaration.

This tremendous force called education is one devoted to the enlargement and enrichment of every faculty both of the race and of the individuals composing the race. It is not a force flung into the air, or hidden in the depths of the sea or the land. It has a human application, yet it has a relationship to the natural elements and the environments which help to make man what he is. This value of environment is illustrated in a personal letter written in 1871, published as Letter Ten in the first volume of "Fors."

It happened also, which was the real cause of the bias of my after life, that my father had a rare love of pictures. I use the word "rare" advisedly, having never met with another instance of so innate a faculty for the discernment of true art, up to the point possible without actual practice. Accordingly, wherever there was a gallery to be seen, we stopped at the nearest town for the night; and in reverentest manner I thus saw nearly all the noblemen's houses in England; not indeed myself at that age caring for the pictures, but much for castles and ruins, feeling more and more, as I grew older, the healthy delight of uncovetous admiration, and perceiving, as soon as I could perceive any political truth at all, that it was probably much happier to live in a small house, and have Warwick Castle to be astonished at, than to live in Warwick Castle, and have nothing to be astonished at; but that, at all events, it would not make Brunswick Square in the least more pleasantly habitable, to pull Warwick Castle down. And, at this day, though I have kind invitations enough to visit America, I could not, even for a couple of months, live in a country so miserable as to possess no castles.[42]

But aside from environment and natural elements, education is above all else a process to be applied, as I have said, to the race and to individuals.

Observe: I do not say, nor do I believe, that the lower classes ought not to be better educated, in millions of ways, than they are. I believe *every man in a Christian kingdom ought to be equally well educated.* But I would have it education to purpose; stern, practical, irresistible, in moral habits, in bodily strength and beauty, in all faculties of mind capable of being developed under the circumstances of the individual, and especially in the technical knowledge of his own business; but yet, infinitely various in its effort, directed to make one youth humble, and another confident; to tranquillize this mind, to put some spark of am-

[40] "Laws of Fésole," cabinet edition, Dana Estes & Co., p. 252.

[41] "Two Paths on Art," cabinet edition, Dana Estes & Co., p. 44.

[42] "Fors," Vol. I., cabinet edition, Dana Estes & Co., p. 132.

bition into that; now to urge, and now to restrain: and in the doing of all this, considering knowledge as one only out of myriads of means in its hands, or myriads of gifts at its disposal; and giving it or withholding it as a good husbandman waters his garden, giving the full shower only to the thirsty plants and at times when they are thirsty, whereas at present we pour it upon the heads of our youth as the snow falls on the Alps, on one and another alike, till they can bear no more, and then take honor to ourselves because here and there a river descends from their crests into the valleys, not observing that we have made the loaded hills themselves barren for ever.

Finally: I hold it for indisputable, that the first duty of a state is to see that every child born therein shall be well housed, clothed, fed, and educated, till it attain years of discretion.[43]

It is through this education of the individual that he is strengthened in right choices, enlarged in intellect, made purer in heart and more divine in his entire character. His capacity and final effectiveness are determined at birth; yet education transmutes possibilities into actualities. This modern truth Mr. Ruskin expresses in "Modern Painters" in saying:

I know well the common censure by which objections to such futilities of so-called education are met, by the men who have been ruined by them,—the common plea that anything does to "exercise the mind upon." It is an utterly false one. The human soul, in youth, is *not* a machine of which you can polish the cogs with any kelp or brick-dust near at hand; and, having got it into working order, and good, empty, and oiled serviceableness, start your immortal locomotive at twenty-five years old or thirty, express from the Strait Gate, on the Narrow Road. The whole period of youth is one essentially of formation, edification, instruction, I use the words with their weight in them; in taking of stores, establishment in vital habits, hopes, and faiths. There is not an hour of it but is trembling with destinies,—not a moment of which, once past, the appointed work can ever be done again, or the neglected blow struck on the cold iron. Take your vase of Venice glass out of the furnace, and strew chaff over it in its transparent heat, and recover that to its clearness and rubied glory when the north wind has blown upon it; but do not think to strew chaff over the child fresh from God's presence, and to bring the heavenly colors back to him—at least in this world.[44]

The race does indeed need education as he has well said in "Stones of Venice":

It seems to me, then, that the whole human race, so far as their own reason can be trusted, may at present be regarded as just emergent from childhood; and beginning for the first time to feel their strength, to stretch their limbs, and explore the creation around them. If we consider that, till within the last fifty years, the nature of the ground we tread on, of the air we breathe, and of the light by which we see, were not so much as conjecturally conceived by us; that the duration of the globe, and the races of animal life by which it was inhabited, are just beginning to be apprehended; and that the scope of the magnificent science which has revealed them, is as yet so little received by the public mind, that presumption and ignorance are still permitted to raise their voices against it unrebuked; that perfect veracity in the representation of general nature by art has never been attempted until the present day, and has in the present day been resisted with all the energy of the popular voice; that the simplest problems of social science are yet so little understood, as that doctrines of liberty and equality can be openly preached, and so successfully as to affect the whole body of the civilized world with apparently incurable disease; that the first principles of commerce were acknowledged by the English Parliament only a few months ago, in its free trade measures, and are still so little understood by the million, that no nation dares abolish its custom-houses; that the simplest principles of policy are still not so much as stated, far less received, and that civilized nations persist in the belief that the subtlety and dishonesty which they know to be ruinous in dealings between man and man, are serviceable in dealings between multitude and multitude; finally, that the scope of the Christian religion, which we have been taught for two thousand years, is still so little conceived by us, that we suppose the laws of charity and of self-sacrifice bear upon individuals in all their social relations, and yet do not bear upon nations in any of their political relations;—when, I say, we thus review the depth of simplicity in which the human race are still plunged with respect to all that it

[43] "Stones of Venice," Vol. III., cabinet edition, Dana Estes & Co., p. 222.

[44] "Modern Painters," Vol. IV., cabinet edition, Dana Estes & Co., p. 497.

most profoundly concerns them to know, and which might, by them, with most ease have been ascertained, we can hardly determine how far back on the narrow path of human progress we ought to place the generation to which we belong, how far the swaddling clothes are unwound from us, and childish things beginning to be put away.[45]

Much that has been said of education according to John Ruskin receives either illustration or emphasis in the account he himself gives of his own education, in his autobiographic "Praeterita." From this interpretation I select a few of the more pregnant paragraphs:

And for best and truest beginning of all blessings, I had been taught the perfect meaning of Peace, in thought, act, and word. . . . Next to this quite priceless gift of Peace, I had received the perfect understanding of the natures of Obedience and Faith. I obeyed word, or lifted finger, of father or mother, simply as a ship her helm; not only without idea of resistance, but receiving the direction as a part of my own life and force, a helpful law, as necessary to me in every moral action as the law of gravity in leaping. And my practice in Faith was soon complete: nothing was ever promised me that was not given; nothing ever threatened me that was not inflicted, and nothing ever told me that was not true.

Peace, obedience, faith; these three for chief good; next to these, the habit of fixed attention with both eyes and mind—on which I will not further enlarge at this moment, this being the main practical faculty of my life, causing Mazzini to say of me, in conversation authentically reported, a year or two before his death, that I had "the most analytic mind in Europe." An opinion in which, so far as I am acquainted with Europe, I am myself entirely disposed to concur.

Lastly, an extreme perfection in palate and all other bodily senses, given by the utter prohibition of cake, wine, comfits, or, except in carefullest restriction, fruit; and by fine preparation of what food was given me. Such I esteem the main blessings of my childhood;—next, let me count the equally dominant calamities.

First, that I had nothing to love.

My parents were—in a sort—visible powers of nature to me, no more loved than the sun and the moon: only I should have been annoyed and puzzled if either of them had gone out; (how much, now, when both are darkened!)—still less did I love God; not that I had any quarrel with Him, or fear of Him; but simply found what people told me was His service, disagreeable; and what people told me was His book, not entertaining. I had no companions to quarrel with, neither; nobody to assist, and nobody to thank. Not a servant was ever allowed to do anything for me, but what it was their duty to do; and why should I have been grateful to the cook for cooking, or the gardener for gardening,—when the one dared not give me a baked potato without asking leave, and the other would not let my ants' nests alone, because they made the walks untidy? The evil consequence of all this was not, however, what might perhaps have been expected, that I grew up selfish or unaffectionate; but that, when affection did come, it came with violence utterly rampant and unmanageable, at least by me, who never before had anything to manage.

For (second of chief calamities) I had nothing to endure. Danger or pain of any kind I knew not: my strength was never exercised, my patience never tried, and my courage never fortified. Not that I was ever afraid of anything,—either ghosts, thunder, or beasts; and one of the nearest approaches to insubordination which I was ever tempted into as a child, was in passionate effort to get leave to play with the lion's cubs in Wombwell's menagerie.

Thirdly. I was taught no precision nor etiquette of manners; it was enough if, in the little society we saw, I remained unobtrusive, and replied to a question without shyness: but the shyness came later, and increased as I grew conscious of the rudeness arising from the want of social discipline, and found it impossible to acquire, in advanced life, dexterity in any bodily exercise, skill in any pleasing accomplishment, or ease and tact in ordinary behavior.

Lastly, and chief of evils. My judgment of right and wrong, and powers of independent action, were left entirely undeveloped; because the bridle and blinkers were never taken off me. Children should have their times of being off duty, like soldiers; and when once the obedience, if required, is certain, the little creature should be very early put for periods of practice in complete command of itself; set on the barebacked horse of its own will, and left to break it by its own strength. But the ceaseless authority exercised over my youth left me, when cast out at last into the world, unable for some time to do more than drift with its vortices.

My present verdict, therefore, on the general

[45] "Stones of Venice," Vol. III., cabinet edition, Dana Estes & Co., p. 167.

tenor of my education at that time, must be, that it was at once too formal and too luxurious; leaving my character, at the most important moment for its construction, cramped indeed, but not disciplined; and only by protection innocent, instead of by practice virtuous. My mother saw this herself, and but too clearly, in later years; and whenever I did anything wrong, stupid, or hard-hearted,—(and I have done many things that were all three,)—always said, "It is because you were too much indulged."[46]

The comprehensive conclusion is:

Thus, in perfect health of life and fire of heart, not wanting to be anything but the boy I was, not wanting to have anything more than I had; knowing of sorrow only just so much as to make life serious to me, not enough to slacken in the least its sinews; and with so much of science mixed with feeling as to make the sight of the Alps not only the revelation of the beauty of the earth, but the opening of the first page of its volume,—I went down that evening from the garden-terrace of Schaffhausen with my destiny fixed in all of it that was to be sacred and useful. To that terrace, and the shore of the Lake of Geneva, my heart and faith return to this day, in every impulse that is yet nobly alive in them, and every thought that has in it help or peace.[47]

A similar experience, and likewise far-reaching, one recalls as occurring in the life of Charles Kingsley. Of Mr. Ruskin's life at Oxford, broken into by his sickness, it is superfluous now to write. This life apparently had little influence over his career. He finally took a "complimentary double fourth." His development was slow, but he finally came to his large self.

I have no space in this story to describe the advantages I never used; nor does my own failure give me right to blame, even were there any use in blaming, a system now passed away. Oxford taught me as much Greek and Latin as she could; and though I think she might also have told me that fritillaries grew in Iffley meadow, it was better that she left me to find them for myself, than that she should have told me, as nowadays she would, that the painting on them was only to amuse the midges. For the rest, the whole time I was there, my mind was simply in the state of a squash before 'tis a peascod,—and remained so yet a year or two afterward, I grieve to say;—so that for any account of my real life, the gossip hitherto given to its codling or cocoon condition has brought us but a little way. I must get on to the days of opening sight, and effective labor; and to the scenes of nobler education which all men, who keep their hearts open, receive in the End of Days.[48]

As one reviews all that Mr. Ruskin wrote through a half-century, and under diverse conditions, on education, the question emerges: What was the worthiest contribution which he made to the great cause, and what, if any, was the defect or weakness in his offering? The answer is not far to seek. Mr. Ruskin's chief contribution lies in the emphasis he placed on, and in the analyses he made of, the moral element in character and training.

By the moral element one does not mean merely the ethical virtues, either major or minor, although they are included. One does have in mind those parts of character which are primarily spiritual or non-intellectual. Perhaps no better single illustration or example could be found than that which is furnished by the Beatitudes of Christ. The love for, and the making of peace, mercy, purity of heart, meekness, are the supreme qualities which he holds most dear. Obedience, faith, gentleness, charity, are words which drop from his pen like dew from the summer skies. To him, cruelty and idleness are abominable. Like St. John, he is an apostle of and to the heart. His seven lamps of architecture are the lights which illumine every human path. The stones of the city which he most adores are laid with the fair colors of goodness and tenderness and love.

Of such interpretation and of such em-

[46] "Praeterita," cabinet edition, Dana Estes & Co., pp. 38–40.

[47] "Praeterita," cabinet edition, Dana Estes & Co., p. 98.

[48] "Praeterita," cabinet edition, Dana Estes & Co., p. 210.

phasis there is abundant need. In an age which delights to call itself dynamic, and whose emblem is either an electric bulb or a gas-engine, placed in an automobile, it is good to find accent put on qualities which are neither splendid nor meritricious nor crass. It is indeed good to find the Divine Spirit not in the whirlwind or the thunder, but in the still, small voice.

This emphasis on the moral side also points out the defect of his theory, as a shadow follows the light. The defect lies in the lack of proper attention to the strictly intellectual side of education. Although the intellect is a less important tool in human progress than is supposed by most men, it does have its great and unique place. Ruskin's own desultory and broken course of education unconsciously affects his theories. The scientific type of mind he contemns. Of the masters in philosophy, as Kant, he has slight knowledge. For the clear light of truth without shadow or turning, free from prejudice and devoid of passion, his mind has slight affinity. He interprets quite as much with the heart as with the brain. To think (although he declares he wishes to be known as a thinker), to reason, to judge, to weigh evidence, he lacked a worthy and adequate power, even with all his unique and tremendously great gifts.

For two of his own great contemporaries, John Stuart Mill and Charles Darwin, he has either derision or sarcasm. Next to Turner, the most outstanding object of his admiration is Thomas Carlyle. He prefers the pre-Raphaelites to Raphael, and Burns-Jones to Michael Angelo. His judgment of personalities interprets his own personality, and helps to determine the worth of his interpretation of education.

Charles F. Thwing
Western Reserve University,
Cleveland

EDUCATIONAL EVENTS

The Presidency of Dartmouth College

Dr. Ernest Fox Nichols has resigned the presidency of Dartmouth College and will go to Yale University next year to fill a new chair in physics in the academic department. Dr. Nichols will at the close of the present academic year have served as president of Dartmouth College for seven years, having previously been professor of physics at Colgate, Dartmouth and Columbia. His letter of resignation and the reply of the trustees follow:

Herewith I tender you my resignation of the presidency of the college, to take effect June 30, 1916, and I pray you to accept it.

Six and a half years ago, when you did me the honor to call me to my present office, the college was passing through a critical period, and in heeding your call I reluctantly left the work of a teacher and student of physics, which for twenty years had fully occupied my time, my mind, my enthusiasm and had gratified my every ambition.

The college needs of that earlier time have been largely met, and through the splendid cooperation and united efforts of many devoted fellow-workers the college is now in an exceptionally strong position, both in its internal organization and in its external relations. There seems, therefore, no compelling reason why I may not ask you to let me go back to my earlier work, the duties and recompenses of which are in fuller accord with my individual tastes and preference. For this return an invitation to a chair of physics in Yale college affords the acceptable opportunity.

Yet in leaving the official service of the college, as in coming to it, I hold its vital interests above my personal wishes. The duties of my office I have found exacting, and its high responsibilities, much as you have so considerately done to lighten them, a heavy burden. Looking forward to the many active years lying before a man of my age, I seriously doubt my endurance to hold through to the end to give the college that vigorous and efficient service which its continued welfare requires of its president. Moreover, I feel a growing conviction that the best work it is in me to do for the college is already done.

You who already know it I need not tell how precious to me have been the personal associations and friendships with the members of your own body, past and present, with my colleagues on the faculty and in the administration; nor need I

speak of the loyal friendship and fine support I have had from graduates and undergraduates alike—relations which from their warmth and heartiness have cheered and lightened my labors and given them whatever value they may have possessed.

The duties of my office I shall surrender gladly. With the priceless human associations it has brought me I trust and pray I may never have to part.

With affectionate respect and regard,

Sincerely,

(Signed) ERNEST FOX NICHOLS

It is with the greatest reluctance that we, the trustees of Dartmouth College, accept your resignation of the presidency of the college, to take effect at the close of your seventh year of service.

Since you undertook the exacting duties of your office you have given yourself loyally and without stint to their fulfilment. In difficult processes of readjustment you have brought to bear a high order of administrative ability, enriched with a large tolerance, an exhaustless patience, a noble dignity and generosity.

You brought to your task at Dartmouth trained powers of analysis, coupled with the loftiest ideals of scholarship. You have thus built up in the college an educational and administrative organization adequate and harmonious. Your impress upon the student body has been in terms of wider conceptions of intellectuality.

It had been our hope that Dartmouth College might long continue to enjoy your leadership. Yet we can but recognize that the sacrifices which you have already made deserve worthier recognition than the demand that you continue them at serious cost to your own well-being.

In the chosen field of science to which you are about to return you will carry our sure expectation of great accomplishment and added honors; but more especially you will carry our warm personal affection, the outgrowth of seven years of intimate fellowship in a common cause.

You will believe us,

With most sincere esteem,

THE TRUSTEES OF DARTMOUTH COLLEGE

THE COLLEGE OF AGRICULTURE OF THE UNIVERSITY OF CALIFORNIA

A PICTURE of the growth of the college is painted by Dean Thomas F. Hunt in his annual report recently issued by the university.

Just one student—one woman—stood up on the commencement platform to receive a degree in agriculture in 1900, the first commencement after Dr. Benj. Ide Wheeler became president of the University of California. At the last commencement seventy-nine degrees were conferred in agriculture, and thirty-six certificates were given last spring for completion of the three-year course in agriculture at the university farm school.

Six years ago there were only 197 students in the college of agriculture. Last year there were more than three times as many—that is, 599 in full university standing in the college of agriculture, not counting the 289 in the three-year course in the university farm school.

Last fall 169 freshmen began the four-year course in agriculture at Berkeley, and 170 men, of an average age of twenty, the three-year course at the university farm. That is, 339 students of college age began the study of agriculture last fall under the auspices of the university, not counting the 186 enrolled in the farmers' short courses.

A total of 18,347 enrollments for correspondence courses in agriculture had been reached by last June. Of these, 9,198 enrollments were newly registered last year. These 18,347 correspondence students are from every county in California, from forty-two other states, and from foreign lands as distant as Greece, India, Africa and the Fiji Islands.

Through the leadership of the university agriculture has now come to be taught in 64 high schools, in 31 cases by graduates of agricultural colleges, and in 56 cases by teachers who have had farm experience, ranging from one to over 25 years.

Last year 400,000 bulletins were sent out, this including twenty-five different agricultural publications. More than eighty other papers were printed in various scientific journals during the year by members of the agricultural faculty.

The university last year had farm advisers in eleven counties, boys' agricultural clubs in 65 high schools, and a host of people in attendance at farmers' institutes.

Great as is this work of agricultural teaching, it is but a part of the work of the university in agriculture, for the experiments and investigations in progress are of at least equal importance to the people of the state.

LEGISLATION FOR STATE SYSTEMS OF VOCATIONAL EDUCATION

THE Bureau of Education reports that no change has taken place during the past year in the number of states having systems for organizing and supervising vocational schools and for assisting local communities in the maintenance of such schools through grants of state aid. The states having such systems are: Massachusetts, New York, New Jersey, Pennsylvania, Wisconsin and Indiana. In each of these states administration is effected through the office of a special deputy or expert assistant attached to the staff of the state superintendent of public instruction or commissioner of education.

In Connecticut the law provides for industrial schools under two optional plans: (1) Support and control by the state board of education; (2) control by the local community, with state aid under specified conditions. In Maryland annual grants are made for the partial support of colored industrial schools. In Vermont, Maine, Minnesota, Montana, North Dakota, Rhode Island and Tennessee provision is made for state appropriations to communities or schools offering approved courses in industrial, manual or household arts subjects.

Earnest attempts to secure legislation for a state system of vocational education in Illinois again failed. Three separate bills were introduced into the state legislature: (1) The "Cooley" bill, drafted according to the suggestions of Dr. E. G. Cooley, of the Chicago Commercial Club, providing for a modified form of dual administrative control, involving special industrial education boards appointed by the regular boards of school trustees; (2) the so-called "Teachers'" bill, placing the organization and administration of vocational education in the hands of the regular boards of school trustees, otherwise embodying certain of the approved features of the Cooley bill; (3) the Hatch bill, providing for unified control, providing that state aid may be given only to vocational education programs based on preliminary community investigation of needs and conditions, and definitely recognizing three factors in vocational adjustment, namely, choice of, preparation for, and employment in some suitable occupation. The committee on education of the assembly held several public hearings, but failed to report out any one of the bills. Lack of agreement among the advocates of the new legislation is commonly understood to be the explanation for the committee's refusal to recommend action at this session.

THE COST OF FREE TEXT-BOOKS

THE following figures on cost of free text-books and stationery and supplies have been compiled by the Bureau of Education from reports of the city superintendents for the school year 1911–12. Other figures giving the cost of text-books in various states for each state as a whole are included in Bulletin 1913, No. 36, about to be issued by the bureau.

Cities of 100,000 and Over

	Textbooks		Stationery and Supplies	
	Elementary Schools	High Schools	Elementary Schools	High Schools
Boston, Mass.	.91	1.94	.80	3.19
Cambridge, Mass.	.69	2.08	.42	4.80
Fall River, Mass.	.53	3.27	.83	1.88
Lowell, Mass.	.50	2.16	.55	1.54
Grand Rapids, Mich.	....	....	1.62	3.93
Minneapolis, Minn.	.67	....	1.19	....
Omaha, Nebr.	.76	2.94	.55	2.39
Jersey City, N. J.	.60	2.26	.51	.88
Newark, N. J.	.79	5.78	.78	4.85
Albany, N. Y.	.97	4.09	.61	1.05
Toledo, Ohio	.88	2.28	.90	2.65
Philadelphia, Pa.	1.52	4.05	....	....
Providence, R. I.	.58	2.27	.54	4.05
Spokane, Wash.	.74	4.21	1.48	4.45
Median cost	.74	2.61	.78	2.79
Average cost	.78	3.11	.83	2.92

Cities of 25,000 to 100,000

Berkeley, Cal.	....	....	1.29	1.88
Pueblo, Colo.	1.15	3.59	1.34	2.85
New Britain, Conn.	.71	....	1.02	....
Waterbury, Conn.	.45	2.87	.38	.50
Decatur, Ill.	.35	....	.38	....
Bloomington, Ill.	....	....	1.82	3.88
Rockford, Ill.	....	....	1.14	1.80
Springfield, Ill.	....	....	.39	1.14
Lewiston, Me.	.38	1.50	.59	1.62
Everett, Mass.	.80	2.46	.79	1.90
Fitchburg, Mass.	1.18	2.45	.48	1.04
Holyoke, Mass.	....	....	1.21	4.68
Lynn, Mass.	.80	2.30	.79	2.33
Malden, Mass.	.80	1.07	.62	2.94
New Bedford, Mass.	.56	5.47	.61	2.78
Pittsfield, Mass.	.62	4.42	1.12	2.26
Quincy, Mass.	.51	1.46	.98	6.17
Somerville, Mass.	.48	2.46	.24	2.81
Waltham, Mass.	.52	1.28	1.11	4.88
Saginaw, E. Side, Mich.	.82	3.02	.47	1.03
Bayonne, N. J.	1.03	2.05	.32	.91
Camden, N. J.	1.70	3.77	1.24	2.10
East Orange, N. J.	1.13	2.34	1.18	5.01
Kingston, N. Y.	.94	1.46	.74	1.67
New Rochelle, N. Y.	.90	4.31	.78	1.51
Niagara Falls, N. Y.	.48	3.67	.50	1.92
Poughkeepsie, N. Y.	.75	2.51	.86	1.38
Utica, N. Y.	....	....	1.29	1.72
Yonkers, N. Y.	.81	3.70	.99	3.33
Altoona, Pa.	.57	1.76	.73	1.67
Erie, Pa.	.72	1.80	.62	1.75
York, Pa.	.64	2.21	.79	1.60
Newport, R. I.	.39	1.42	.52	1.23
Pawtucket, R. I.	.56	2.71	.55	1.71
Warwick, R. I.	.90	2.50	.98	2.64
Median cost	.72	2.46	.79	1.88
Average cost	.75	2.61	.82	2.32

EDUCATIONAL NOTES AND NEWS

JOHN P. GARBER, associate superintendent, has been elected superintendent of the public schools of Philadelphia. He takes the place of William C. Jacobs, who died recently, after having succeeded Martin G. Brumbaugh when he was elected governor of Pennsylvania.

PRESIDENT MEZES, of the College of the City of New York, was elected president of the Association of Urban Universities at the meeting held in Cincinnati last week. The next conference of the association will be held at the City College.

AMONG those who were announced to make addresses at the seventieth annual meeting of the New York State Teachers' Association and affiliated organizations held this week at Rochester are former President William H. Taft and Dr. Philander P. Claxton, United States Commissioner of Education.

HARRIET LOUISE KEELER, formerly superintendent of the Cleveland public schools, has been elected a trustee of Oberlin College. Miss Keeler graduated from Oberlin with the class of 1870. She is the first woman to be elected a trustee.

CHARLES M. SCHWAB, president of the Bethlehem Steel Corporation, has been elected a trustee of Cornell University.

PRESIDENT THOMAS W. CHURCHILL, of the board of education, New York City, announces the appointment of a committee of principals to investigate the operation of the Gary school plan in Public School 89, Brooklyn, and Public School 45, Bronx. The members of the committee are: Lizzie A. Rector, Herman S. Piatt, Edward R. Maguire, Helen A. Stein, Louis Marks, John W. Rafferty, Oswald Schlockow, Margaret Laing, George W. Dorland, John J. Driscoll.

AT the November meeting of the Yale Corporation the members of the corporation invited the emeritus professors to lunch with them in Memorial Hall. At this time the portrait by Mr. Sergeant Kendall of Mr. Addison VanName, university librarian emeritus, was exhibited, and the following resolutions were adopted:

Voted, that the Yale Corporation, meeting on the eightieth anniversary of the birthday of Addison VanName, librarian emeritus of Yale University, extends to him its sincere congratulations and takes this opportunity, in presenting the library with a portrait of him by Sergeant Kendall, to assure Mr. VanName that his forty years of modest and devoted service in the Yale Library entitle him to be honored and remembered with gratitude by the present and future generations as one of the builders of the modern university, especially because of his skill, scholarly judgment and indefatigable industry in increasing our book collections.

TESTIMONIALS to Professors Perry and Harrison on their retirement from the staff of the Imperial College (Royal College of Science) have been arranged. The testimonial to Professor Harrison, who has been associated with the department of mathematics and mechanics during thirty-two years, has taken the form of an illuminated address, accompanied

by valuable personal gifts. In the case of Professor Perry, former students of the Finsbury Technical College desired to be associated with the testimonial, in recognition of his services to that institution prior to his joining the staff of the Royal College of Science in 1896, and a permanent memorial has been established in the form of a medal or prize to be awarded annually at each of the two institutions.

THE Romanes lecture before the University of Oxford will be delivered this year by Professor E. B. Poulton, Hope professor of zoology in the university, on December 7. The subject will be "Science and the Great War."

DR. ARTHUR C. MCGIFFERT, professor of church history in the Union Theological Seminary, has been chosen Henry Ward Beecher lecturer at Amherst College for next year. The latter part of April he will give a course of lectures on some phase of the history of Christian thought.

THE twenty-third summer meeting of the American Mathematical Society will be held at Harvard University early in September, 1916. At the eighth colloquium of the society, held in connection with this meeting, courses of lectures will be delivered as follows: By Professor G. C. Evans: "Topics from the Theory and Applications of Functionals, including Integral Equations." By Professor Oswald Veblen: "Analysis Situs."

DR. F. HASENÖHRL, professor of physics at Vienna, has been killed in the war.

DR. RAPHAEL MELDOLA, professor of organic chemistry in the University of London, died on November 16, at the age of sixty-six years.

THE New England Superintendents' Association met at Norwood on November 19. Among the speakers were George F. Willett, of Norwood, who spoke upon the "Ideals and Methods of the Norwood Civic Association"; Hon. Calvin N. Kendall, commissioner of education of New Jersey, who spoke on "Achieving the Purposes of School Supervision"; J. D. Whittier, superintendent of schools at South Shaftsbury, Vt., on "The Superintendent and the Teacher"; William D. Fuller, superintendent of schools at Old Town, Me., on "Training of Teachers in Service"; H. O. Clough, superintendent of schools at Deep River, Conn., on "The Work of the Rural School Supervisor in Connecticut," and Austin H. Fittz, superintendent at Norwood, on "Interrelations between Community and Superintendent."

ON the faculty of George Peabody College for Teachers Dr. Lewis Cecil Gray, professor of economics, takes the place of Dr. John Lee Coulter. Dr. Gray graduated from William Jewell College and received his doctorate at the University of Wisconsin. He comes to Peabody College from the University of Saskatchewan, Canada, where he has served as professor of economics. Dr. Gray recently made a special study of the plantation system of the south, working in the Division of Agriculture, Bureau of the Census, and has written extensively on southern economic subjects. Miss Emma B. Matteson has been appointed instructor in the home economics department. She is a graduate of Pratt Institute and of Teachers College, Columbia University, with additional study in public health and sanitation at the Massachusetts Institute of Technology. She has taught at Pratt Institute, Simmons College, and the State Normal School, Winona, Mich. Mr. B. A. Pratt and Mr. J. M. Shaver have been added to the faculty of the Knapp School of Country Life. Mr. Pratt comes from the Missouri State Normal School of Warrensburg, and Mr. Shaver from the University of Tennessee where he was instructor in botany.

PROFESSOR T. W. GALLOWAY, Ph.D., who has occupied the chair of biology at James Millikin University at Decatur, Ill., since the establishment of that institution in 1903, has been appointed professor of zoology at Beloit College, Beloit, Wisconsin. A. A. Tyler, Ph.D. (Columbia, '97), for some years professor of biology in Bellevue College, Omaha, Nebraska, has been appointed to the chair of biology at James Millikin University, to succeed Dr. Galloway.

DR. LEO LOEB has been appointed to a newly established chair of comparative pathology in

the medical school of Washington University. This research department is made possible by a fund provided for five years by friends of the university for the purpose. The university announces also the appointment of Philip A. Shaffer, Ph.D., as dean, and the following promotions: Borden S. Veeder, M.D., to associate professor of pediatrics; Robert A. Gesell, M.D., to associate in physiology; Philip C. Jeans, M.D., to instructor in pediatrics.

DR. ROBERT RETZER, formerly of the University of Chicago, has accepted the professorship of anatomy and deanship of the Creighton Medical College, Omaha.

CLEVELAND school teachers on November 16 lost their suit for reinstatement of six officers of their union who had been discharged by Superintendent Frederick on order of the board of education for their activity in organizing the union. The Supreme Court refused to review the suit brought by a Cleveland tax payer in an attempt to have Superintendent Frederick punished for alleged contempt of court in discharging the teachers, allowing to stand the court of appeals decision which held that he was justified in his action. Nearly two years ago 1,300 Cleveland school teachers organized the Grade Teachers' Club and took steps to affiliate with the American Federation of Labor. The board of education then adopted a resolution requiring the immediate dismissal of any teacher joining the federation.

AT the University of Minnesota efforts are being made to bring faculty and regents into closer personal relations. At a general assembly of the whole teaching staff held September 27 ten of the twelve regents of the university were present and made brief addresses. The president of the board, Mr. Fred B. Snyder, emphasized the fact that the regents regarded the faculty members not as employees but as colleagues responsible for the really important work of the university. He made an appeal for the hearty cooperation of all concerned for the welfare of the institution. On the evening of November 3 the new members of the faculty were invited to meet the regents at the house of the president of the university. For December 14 a dinner is being arranged by a faculty committee. On this occasion there will be an informal discussion in which it is expected that both faculty and regents will express their views about university ideals and policies.

THE twenty-fourth annual meeting of the American Psychological Association will be held at the University of Chicago, December 28, 29 and 30, 1915. The annual dinner-smoker with the address of the president, Professor John B. Watson, on "The Place of the Conditioned-Reflex in Psychology," will occur at the Quadrangle Club on Wednesday evening, December 29. A special feature of the program will be a discussion of the relations of psychology to the subjects of philosophy, of science and of pedagogy in the curriculum. The local member of the executive committee, in charge of the meetings, is Professor H. A. Carr, of the University of Chicago. Communications which concern the program may be addressed to the secretary, Professor R. M. Ogden, at Lawrence, Kansas.

THE attendance at the High School Conference which met at the University of Illinois this month, exclusive of university people, was 1,186. Two main subjects were emphasized; namely, the high-school library and the question of the junior high school. Besides the annual high-school conference, there were held at the university the third annual meeting of the City Superintendents' Association, and the third annual meeting of the Illinois State School Board Association.

UNDER the will of Justus S. Hotchkiss, of New Haven, Yale University is made residuary legatee in the following paragraph of his will: "The residuary estate is left to Yale University to be kept as a separate fund by the name of the Justus B. Hotchkiss fund, and the income applied as follows: One third to the Yale Law School, one third to the academic department, known as Yale College, and one third to the theological department." The bequest will it is announced amount to about one million dollars.

THE architectural school of the University of Pennsylvania has moved into the building

vacated by the dental school last spring. Their quarters on the third and fourth floors of College Hall have been made over into offices and classrooms for the college. The advisory system, which has been working out so successfully in the past, depends greatly upon proper office facilities and it is hoped that it will now be possible for the first time to provide offices for every one. Under the new arrangement, the department of Latin, Romance languages, Germanic languages and anthropology will be housed on the third floor. English, history and Greek will occupy the second floor.

The "Phœbe Apperson Hearst Plan," toward the realization of which the University of California has been working for the past ten years, is now rapidly advancing. The university has just completed the construction of the 300-foot $200,000 white granite bell tower, the Sather Campanile; is erecting the steel frame of Benjamin Ide Wheeler Hall, an $800,000 class-room building, and within the next few months is to begin the construction of a chemistry building to cost $250,000; a second agriculture building to cost $350,000, and the completion of the university library, on which $850,000 has already been spent at an additional cost of $400,000. This will give the building a book-storage capacity of a million volumes.

In 1918 Illinois is to celebrate the centennial of its admission to the Union, and as one feature of the celebration there is planned a "Centennial History of Illinois," a cooperative work in five volumes, to be published early in 1918, by funds appropriated by the state. The commission has selected for editor-in-chief of this history, Professor Clarence Waldworth Alvord, of the University of Illinois, editor of the "Illinois Historical Collections" since 1905. It is due in large part to him that the state has been awakened to the fact that it is its duty to preserve its own history for future generations, instead of relying on the chance interest of individuals or the uncertainty of private historical materials. It is planned to divide the history of Illinois in such a way that it may be written in five volumes, thus:

I. "Province and Territory, 1673–1818."
II. "The Frontier State, 1818–1848."
III. "The Era of Transition, 1848–1870."
IV. "The Industrial State, 1870–1893."
V. "The Modern Commonwealth, 1893–1918."

Reorganization of education under the junior high-school plan or something similar is definitely under way, according to Professor T. H. Briggs, whose review of secondary education has just been issued by the U. S. Bureau of Education. The junior high school has been defined "as an organization of grades 7 and 8 or 7 to 9 to provide means for individual differences, especially by an earlier introduction of prevocational work and of subjects usually taught in the high school." There are now 57 cities in the United States where junior high schools are organized in unmistakable form. "One advantage claimed for the junior high school," declares Dr. Briggs, "is that it groups children so that subjects seldom taught in the grammar grades may be introduced, thereby giving each pupil a more intelligent understanding of the work of the world, of the possibilities in the subject and in the pupil himself. The junior high school also makes easier the transition of pupils to the high school. That the change between the elementary and the high school should be so sharp permits no justification. To bridge this gap by earlier introduction to high-school subjects and methods of teaching has greatly improved results, it is claimed. The junior high school has furthermore greatly decreased elimination of pupils from school. This elimination after the seventh, eighth and ninth grades has been one of the greatest reproaches to our educational system. Any plan that promises to retain children in school beyond these grades is worthy of the most careful consideration." The statistics given by Dr. Briggs show that a much larger per cent. of students enter high school where junior high schools exist than before they were organized. That the junior high school furnishes an opportunity for various needed reforms in instruction is the final claim of the new movement, according to Dr. Briggs. He points out that in the junior high school a course of study

based on the newer principles of psychology, sociology and economics, various provisions for individual differences, and especially an improved method of teaching, can now be introduced. Los Angeles (Cal.) high school, Butte (Mont.) high school, Wisconsin high school, Madison, Wis., and Horace Mann School, New York City, are cited as successfully organized junior high schools, "Los Angeles having far outstripped all other cities in developing them."

THOSE who expect to be teachers in Kansas will hereafter serve an apprenticeship of at least six months in the public schools, if the plans of Dr. F. J. Kelly, director of the training school of the Emporia Normal, and dean-elect of the school of education at the University of Kansas, are carried out. Teachers entering the normal school this year without a requisite amount of experience will be allotted to city training teachers and required to do apprentice work for a semester. The training teachers are experienced teachers in the public schools. They will be appointed by the state, and will receive five dollars a month additional to their regular salary. Each training teacher will have two apprentices. For teachers entering the normal school with several years teaching experience a different method will be used. They will be assigned grades in the model school, and at the two o'clock hour on every day their grades will be taught by the normal critic teachers. Each teacher will in this way be given training in the special work that she is training for. The fourth grade of the Emporia Model School will be reserved as a laboratory for advanced work and experiment.

THE principles of scientific farming have been developed so rapidly in the last few years that there is now a special field in writing for men who are farmers. At the University of Missouri, many of the men who are studying agriculture are also taking a course in the school of journalism, the aim of which is to enable the students to write farm news for the agricultural press of the country. The course is given by Charles G. Ross, associate professor of journalism. "The purpose of this course is not to make poor editors out of good farmers," says Mr. Ross, "but to teach good farmers how to write good English." Mr. Ross says that there is a growing demand for men who are trained both in journalism and agriculture. A Missouri-Arkansas news letter, sent out by the St. Louis Bureau of the United Press, regularly uses articles that are written by the students who are taking the course. Farm magazines are always ready to use well written stories concerning the farm and the farmers. "Very few of the students who complete this course ever leave the farm for journalism," says Mr. Ross. "Many of them, however, find it profitable to write articles concerning their farm experience. A few of them have become editors. A. C. Page, of Kansas City, a student of the college of agriculture who completed this course is now editor of the *Orange Judd Farmer* of Chicago." Between fifty and sixty agricultural students take this journalism course yearly.

WE learn from the *Oklahoma Journal of Education* that sixteen high schools in as many different cities of the state have complied with the provisions of an act of the last legislature, providing that where certain courses of studies are taught in high schools the graduates of such schools shall receive a teacher's certificate and have been approved by State Superintendent R. H. Wilson. The schools approved are the high schools of El Reno, Cushing, Cherokee, Norman, Blackwell, Muskogee, Hobart, Pryor, Chickasha, Okmulgee, Waurika, Enid, Snyder, Shawnee, Lawton and Elk City. Four of the best high schools in the state, including the Oklahoma City school, have not completed arrangements to comply with the law, but will within a short time. Several others are likely to be approved.

THE New York State College of Forestry at Syracuse has closed registration for the college year with 274 men. These men have registered for four- and five-year professional courses in forestry and represent 55 counties in the state and 12 states outside of New York. Some of the largest county representations come from Westchester, New York, Erie and Onondaga. The following states are rep-

resented: Massachusetts, Vermont, New Hampshire, Connecticut, New Jersey, Pennsylvania, Ohio, Kansas, Virginia, Wisconsin, Minnesota and District of Columbia. Russia and Armenia are represented as foreign countries. Besides the 274 men in the professional courses in the State College of Forestry at Syracuse there are 18 men taking the one-year practical course at the State Ranger School at Wanakena.

THAT more than half of the men enrolled at Berkeley in the University of California are self-supporting, either wholly or in part, and that 22.2 per cent. of all of them earn all that they spend is shown by written statements obtained this fall by Recorder James Sutton and Dean T. M. Putnam from 2,963 men. Similar statements were obtained from 2,136 women students, and it was found that 20.7 per cent. of these earn their own living either wholly or in part, 9.4 per cent. of the women students being wholly self-supporting. It was found also that 730 men or 24.5 per cent. live in fraternities or house clubs, while 1,089 men, or 39.9 per cent., were found to be living with relatives. Just 748, or 27.4 per cent., were found to be living elsewhere than with relatives or fraternities. For the women students the figures were as follows: living with relatives, 1,115, which is 54 per cent.; living in fraternities or houseclubs, 288, which is 14 per cent.; boarding elsewhere than with relatives or in clubhouses, 499, which is 24.2 per cent. It was found also that 74 men and 30 women students are housekeeping for themselves, as single individuals, in complete solitude, while 88 men and 132 women students are doing their own housekeeping, in association with other students.

CHILD Welfare Exhibits is the title of a bulletin issued by the Children's Bureau of the Federal Department of Labor. This has been prepared in reply to the many inquiries received by the bureau about exhibits, and single copies may be had for the asking. The bulletin will give those who expect to observe the nation-wide "baby week" next March, or those who are planning a baby show, a children's health conference or any kind of children's exhibit the benefit of expert advice and practical experience in successful exhibit work. The bulletin describes effective small exhibits of one or another phase of child problems. It defines a "child welfare exhibit" in the title of which the name of the city or state appears as a "well-rounded presentation of the whole question of the welfare of the community's children," and sounds a warning against undertaking such a general exhibit without the cooperation of all the social agencies of the community. The results of child welfare exhibits are emphasized. "A new factory inspector in Kansas City, a housing inspector in Louisville, a $25,000 school building in a congested district of Northampton, increased sewer connections in Easthampton where the ice supply of the town was menaced, are types of results which have been secured in practically every community that has devoted sufficient time and thought to the planning of a child-welfare exhibit. In cities where no organized combination of social agencies exists to interpret and carry out the legislative program suggested by an exhibit, the exhibit organization itself is often a first step to such a combination." The bulletin includes a complete list of all child-welfare exhibits owned by state departments, January 1, 1915, and a copy of the record blank used by the Children's Health Conference of the Children's Bureau.

DISCUSSION AND CORRESPONDENCE

OUR "DOCTORED" COLLEGES

"I HAVE resolved never again to turn my undergraduates over to the mercy of young Ph.D.'s." So the president of a flourishing state university recently declared to me. "Why," he continued, "it takes five years to make a common-sense teacher of a raw doctor fresh from three years of graduate work. I intend hereafter to take men, *not for their degrees, but for what they have done or bid fair to do.*"

Those words were a sign of the changing attitude in the American college world. And it is high time for the change. For three decades or more the universities and colleges of America, imitating the colleges of Germany, have been "doctored" to the limit, and the

resulting specialization has filled the soul of the undergraduate with unutterable weariness. Young doctors of philosophy, fresh from the prolonged study of some remote nook of science or literature, have been turned loose on freshmen and sophomores and have bored them to desperation with minutiæ. These young teachers have apparently lost all sense of proportion; the little corner of botany they have investigated looms far larger than the whole subject of botany; the sources of one of Marlowe's plays are far more important than the whole field of Elizabethan drama. They can't see the forest for the trees; they can't see the fact for the facts.

And how they adore facts, especially if they are minute facts! Facts, facts; they are afraid of enthusiasm lest in their fervor they might lose a fact. Their search for details has become so inherent that the large vibrating spirit of the subject is totally beyond them. I have known a professor of Greek, on coming across a phrase about the croaking of frogs, to hold his class overtime in order to discuss whether the author was correct in saying that frogs croaked in the fall. My own lecture was delayed while I waited for his class to settle this momentous question. Did this increase the love of the student for the Greek classics? One might almost venture to declare that with his present methods it is beyond the power of the raw Ph.D. to make his classes genuinely *love* any subject. Methods, systems, unimaginative pedagogical formulas without number are the result. The process of teaching degenerates into a mere matter of seeing that the student gets a mass of facts—big or little, it matters not. Methods and systems! when what is needed is a hearty dose of warm-blooded, enthusiastic appreciation. Undoubtedly, in my own field of English this faith in formulas is a cause of the untold number of rhetorics, systems of writing and methods of composition which the publishers of America are striving to dispose of to the high schools and freshmen classes of our country. It seems never to occur to these systematized "doctors" that the genuinely expressive writers of America and England have been men who were not bored with composition books in college, but who in their boyhood *browsed* about in libraries or among the neighborhood books until they found what their souls longed for and became so saturated with its spirit that they unconsciously absorbed its so-called style. How often in reading biographies of such men as Longfellow, Holmes, Hawthorne, Dickens, do we run across that boyhod habit of *browsing* among books until some life-affecting favorite was found. But this does not lead to "extreme accuracy" and minutiæ, and extreme accuracy and minutiæ are the gods before which our university teachers now bow down. Now, the result of all this naturally is that students are not leaving the university of to-day with the general, all-round culture the boy received in the small college of fifty years ago. I believe that an investigation of the recent graduates of our larger institutions—if they retain an interest in any subject whatever that they have taken—would show that they are lop-sided mentally. They either are not enthusiastic over any subject they have had, or have become interested in one subject only and have lost absolutely all interest in any other field of knowledge. This is not education; this is not culture. Gladstone was a statesman, but he never lost his genuine affection for ancient literature; Cecil Rhodes was an empire builder, but he took his Greek and Latin classics with him into the South African wilderness; Jefferson was a practical leader of men, yet his culture included a multitude of interests—art, music, architecture, linguistics, literature, philosophy, what not. But to-day it is too often a fact that the university man is an intense student of chemistry and sneers at Wordsworth, is a specialist in Elizabethan drama and knows nothing of Longfellow; or can recite yards of Anglo-Saxon and ells of Middle English and can not name a poem by Goethe.

Is it thought that I exaggerate the matter? Within the last four years I asked a teacher of comparative literature in one of our larger universities what he thought of certain writings of Walt Whitman and he told me

frankly that he knew absolutely nothing of Walt Whitman. His idea of comparative literature, I soon discovered, was Old French romances and English literature previous to Chaucer. To-day our higher English courses are medievalized to a frazzle and our science courses are divided and subdivided until the students, as well as the professors, have lost all sense of the relative importance of things. Our universities are in the same predicament as some of our larger shoe factories where, it is said, there is not a single workman who knows how to make an entire shoe. We have a superabundance of young Ph.D.'s who can teach with astounding minutiæ—bless the mark!—some one little field of literature, but who flounder about hopelessly when attempting to give a general survey course in the subject. In my own work I saw one of these young men attempt to give such a course in English literature, and I thought he never would get past the medieval period. He had written his thesis on a fourteenth century subject, and the superlative importance of that century had to be impressed though the heavens fall. Meanwhile his class of sophomores yawned and doubtless wondered why so much fuss about so small a matter.

Thus dividing and subdividing and misplaced specialization and consequent lack of balance continue. The professor of some special section of biology has had no time to gain a good sound knowledge of geology; the instructor in chemistry who has written a thesis on chondrosamine is unable to show the relationship between common principles in botany and chemistry. To such an extent has this specialized ignorance progressed that the average university specialist is using a technical lingo wholly beyond the ken of the public. One might venture the prophecy that it will soon be impossible for the college professor to discuss his particular field in language intelligible to the general public. Fortunately the affair is fast becoming so bad that not even the professors can understand one another. A writer in a recent number of *Science* seriously advises the abolition of all learned societies because the scientists and the professors are forced to listen to papers which are "entirely beyond the ken and comprehension of nine tenths of them." "Let me in all seriousness," continues the writer, "recommend the abandonment of publication of your *Proceedings,* if not even the cancelling of your scientific sessions!" Would it not be far better if our investigators in science or literature could come together and compare the larger, more all-embracing facts they have discovered and thus attempt to evolve some of the more general and important principles underlying all life or all literature? But too often these grubbers for minutiæ are too busy collecting small data to spare time for such a helpful comparison and beneficial endeavor.

What we need in our universities of to-day is more men who are familiar with several correlated fields; who are willing to be collectors and interpreters of the latest data in these related subjects; and who can put before the students in plain, every-day, interesting language these relationships and interpretations. We need some young doctors of philosophy who are not fired with an unquenchable fervor—if they have any fervor—to be graduate professors. We need men with the broad, genial outlook of the old-fashioned professor of natural philosophy rather than so many undergraduate specialists in entomology, ecology, embryology, bacteriology, and heaven knows how many other "ologies." We need more professors of the old-fashioned type—men who did not go through a subject with a fine-toothed comb, to the soul-harrowing weariness of their students, but who possessed a knowledge and a culture that compared with affectionate contagious interest several sciences or several literatures. Above all, perhaps, the American university is in need of a professor of comparative knowledge or of things in general, who can rescue the students from the bewildering coils of the frenzied specialists and bring him up to the Mount of Right Proportions, where he can look about and consider things in their just relationships. For what the undergraduate of America sorely needs to-day is not so much

specialized minutiæ, but that culture which grants a large and liberal view of science, literature, and life as a living, organic whole.

CARL HOLLIDAY

UNIVERSITY OF MONTANA

DOUBLING THE EFFICIENCY OF THE SCHOOL BOY

THE American public school boy—God bless him—is chock full of possibilities seldom ingathered to factors of stable efficiency. Rioting in an overgrowth of normal forces (prepotencies) his initiative too often runs away with his thoroughness or power to assemble his energies. Hence his outlook is too diffuse, standards too vague, his ambitions too scattered. To be sure he makes many individual successes leading to all sorts of personal advancements mainly through a hit or miss seizing of accidental opportunities and by displaying vast inventiveness and resourcefulness.

If all these excellent powers could be concentrated into lines of consistent advance, protected by systematic standards and centralizations of energies, we might well defy the earth. No such safeguards are furnished, no completely efficient methods of education either in school or in the preliminary lines of industries. What is lacking? Obviously few and wholly inadequate means of motor training are supplied, which are the foundations of mental power. "We think in terms of muscular movement." Motion is the forerunner of mind, an essential part of the process. How can this be obtained? By compulsory neuro-muscular, psychomotor, education.

The American boy deserves much more in his public-school course than he gets. He needs a uniform discipline and motor training such as is so well afforded by the schools of Germany. The young man also needs an equivalent supplied by the best features of army training. Join these two fundamentals, viz., what he gets and what he might easily get, and you have the making of a citizen body which can and should rule the world of thought, of industry, of the more scholarly and scientific advances which constitute a "triumphant democracy."

Let me briefly sketch the plan I have offered to the newspapers last summer, and endorsed by many high in the confidence of the American public. Make no mistakes; I am advocating no militarism, no bellicose features whatsoever, but solely certain practical qualifications which would put our boys in the forefront of home-makers and home-defenders.

I proposed that during the summer vacations following the three final years in the primary schools, in which the boys average in age, fourteen, fifteen and sixteen years, that each state shall provide two months of life in camp with systematic physical, engineering and disciplinary training similar to the best, most practical forms of education furnished by the European army service, but without any special military or naval features. These three periods of two months each total six months, the least time in which to supply systematic physical and moral disciplinary instruction.

Let these camps be in reach of all big centers, let transportation be free, let food, lodging, directors, caretakers and teachers be provided by the state and the federal government. Let the teachings be in such fundamentals as prompt obedience, bearing of responsibilities, orderliness, systematic care of tent, clothing, food, its selection and preparation, in mass maneuvers, drills, also in competitive forms of athletics, *e. g.*, baseball, football, soccer, lacrosse, etc. Also the elements of forestry, woodcraft, of engineering, surveying, road-building, bridge-building, the use of small boats, rowing, sailing, construction of rafts, in elements of varied physical proficiencies, of self-mastery, taking care of oneself in the open on land or water; tracking of animals or men, scouting, map-making, signalling, camp facilities such as bed- and fire-making, outdoor cooking and especially in first aid to the injured.

It is obvious that those boys who happen to learn something of these arts and handicrafts are merely small selected groups; no opportunities are enjoyed by others. I maintain

that all our boys should be provided with chances to acquire skill in such practical arts, crafts and procedures. They would thus become vastly more adaptable and useful in any line of industry whatsoever. The stronger and cleverer boys would soon become teachers of the others, would themselves gain immensely by bearing and directing responsibilities and would soon reduce the cost of expert teachers. Timid and weak boys would be gradually led on, encouraged and carefully handled till they become vigorous, confident and proficient.

Teams would then not be, as now, made up of selected individuals; the vast majority being unable to get opportunities for systematic play. Every single boy should thus have an equal chance. If a boy be not strong enough, or if he needs to earn a wage in summer, he could be excused.

Among other subjects useful to teach are: elements of steam, electric and marine engineering, or wireless telegraphy, of signalling, how to launch and command small boats, use of compass, steering by the stars, elements of weather science, charting, etc. Our merchant marine is always in need of officers and here is a way to lay foundations for the best commanders.

Should there arise any fear of foreign invasion, or any need for army or navy service, boys so trained have already got the foundations well laid. The best boys should get certificates of proficiency of utmost use in securing good jobs; also the military and naval schools will have to look to the scout masters for appointments to West Point and to Annapolis.

J. Madison Taylor

Philadelphia, Pa.

THE WORK OF A MUNICIPAL COLLEGE OF ARTS AND SCIENCES

The modern municipal college of arts and sciences which takes its municipal character seriously has its work pretty definitely marked out for it by its title. As an educational institution its function is to develop intelligent, efficient citizens, and as a branch of the city government its function is to place at the disposal of the city the services of its experts in so far as those services can be utilized by the municipality or by its citizens in their endeavors to improve the social or civic life of the city. The present paper is devoted to a brief description of the work of the municipal college of arts and sciences of Toledo University, the Municipal University of Toledo, Ohio, as an educational institution.

Recognizing the fact that a large number of students in a city college will be able to remain in college only two years, the municipal college of arts and sciences has organized its work into two college divisions, referred to as the junior and senior colleges. The aim of the junior college is to familiarize the student with the most important phases of his modern urban environment as well as to introduce him to the important lines of human thought and endeavor with which the studies in the senior college deal more intensively. Too often the student who has completed two years of college work feels that his studies have taken him nowhere. The student who completes two years of work in the municipal college leaves his college better prepared to meet the social, economic and political problems which will confront him, better prepared to render intelligent service to his fellow citizens if the junior municipal college has done its work efficiently.

The college does most of its conscious educational work through its courses of study. The problem of determining which of these courses the students should be required to take is one which will always give trouble but which in the case of the municipal university with its definite civic aim is not nearly so troublesome as it is in many other institutions. Only those subjects which will function directly in the life of the student have been included in the subjects required of all students in the junior municipal college. No subject will be retained in the required list unless there is evidence that, as it is being administered, it will function in the lives of its students. The courses required in the junior college include:

1. Principles of Human Behavior (3 hrs.).

2. University Education (2 hrs.).
3. Modern Social Problems (4 hrs.).
4. Modern Economic and Political Problems (4 hrs.).
5. Historical Study of Modern European and American Social, Industrial and Economic Problems (6 hrs.).
6. Rhetoric (5 hrs.).
7. Modern English and American Literature (4 hrs.).
8. Science (6 hrs.).
9. Physical Training (4 hrs.).
10. Electives (22 hrs.).

While the titles of the courses in the study of modern social, economic and political problems and of the courses in rhetoric and physical training sufficiently define those courses to make evident why they have been included in the list of required subjects, this may not be true of the titles of the other courses. Consequently a few words describing the work of these other courses may be appreciated by the reader.

In the course in principles of human behavior the students are interested in discovering how they behave and why they behave as they do, and in endeavoring to apply the principles thus discovered to their conduct with a view to increasing the efficiency of their own behavior and their control of the conduct of others.

The course in university education aims to familiarize the student with what the universities of the past and of the present have done and are endeavoring to do for their students. It is a comparative historical and psychological study of college and university education with a view to helping students to orient themselves in college and to discover the value of the various studies of the college curriculum. Attention is given to a discussion of some of the most important problems which confront college men and women.

It is the aim of the course in modern English and American literature to give the students a chance to read, discuss and appreciate the best of literature which is influencing the lives of men and women of to-day.

In the work in science students may choose between carrying a regular sophomore course in science or mathematics or a course in applied science and hygiene.

The elective courses may be taken in any department or departments in which the student is prepared to carry the work.

Upon the completion of sixty hours of required and elective work, the university confers upon the student the title of Apprentice in Arts. The title indicates to the citizens of the municipality supporting the college that the holder has familiarized himself with the important phases of his social and physical environment, and that he has a knowledge of important modern movements in Europe and America, a practical understanding of the principles of human behavior, ability to express himself and an intelligent comprehension of the educational ideals and principles of the various types of institutions of higher learning in America and Europe. To his own university and to other institutions of higher learning the title is evidence that the student has done two years of substantial college work which has prepared him to intelligently select and pursue courses in which he is deeply interested offered by the senior college.

While the aim of the junior college of arts and sciences is to familiarize the student with himself, his college and his urban environment, and to develop in him interest in the various lines of human thought and achievement, the aim of the senior college is to help the student make a more intensive study of the problems in a few of these lines. Hence the requirement that the student select a major of from eighteen to twenty hours and a minor of from twelve to fifteen hours. Provision is made for the student to select a sufficient number of courses in departments outside of his major and minor subjects to make a total of sixty hours of work in the senior college. A second aim of the senior municipal college is to give the student training in performing service for the municipality which has provided the educational opportunities which he has enjoyed. Candidates for the bachelor of arts degree are therefore required to do a piece of work for the city or to perform

some task in which a fairly large percentage of the citizens will be interested. In this work the student is supposed to apply in service of the city or of his fellow citizens the knowledge which he has gained in his major study.

In the work of both junior and senior colleges the student is constantly dealing with vital problems and facts connected with the life and activities of its citizens, while throughout the course there are developed in him ideals of service and appreciation. The apprentice in arts has prepared himself for intelligent citizenship, while the bachelor of arts has prepared himself to be of service to his fellow citizens and has demonstrated his ability to be of such service.

A. Monroe Stowe

President's Office,
Municipal University of Toledo

QUOTATIONS

THE AMERICAN UNIVERSITY LIBRARY

A history of the Harvard Library, just published in connection with the opening of the Widener Memorial building, shows clearly how the university's growth has been marked by its stages of book-collection, how its books have always been its heart. This university library, like most others, has been built up through the care and sacrifice of groups comparatively small. Its beginnings were theological, but before 1700 we not only find critics recognizing the fact, but benefactors remedying it. By the end of the Revolution it contained "thirteen thousand books, disposed in ten alcoves." With the new century began a steady increase, which still continues, the library having doubled approximately every twenty years. It received its second special fund only in 1801, but like gifts have come to it till they now total over a million dollars. Almost the first special collections were the Boylston medical books and John Quincy Adams's Russian books; such collections are now enumerated by the score. The expansion of university courses in recent years might be gauged by the appointment of new curators—in Modern Italian History, in South American Literature and a dozen other subjects. "Sturdy beggars," as the librarians have been called, have been increasingly zealous in making new books lead the way to new fields. There are now nearly two million books, to furnish the facilities in a thousand different studies.

It is not many decades since the place and value of a college library were ill understood. That was the day of texts, with few lectures, and hence little required reading: the students were left almost entirely to their own choice; the libraries were poorly classified and arranged, and many branches were open only on certain days; while administration was so poor that investigation was arduous rather than attractive. There is still remembered the library head who used indignantly to inquire: "No provision for students? Why should there be? They have all they can do to take care of their daily work." The remarkable advance in administration has been the work of a quarter-century. It was not until fifty years ago that Harvard really had a librarian in the modern sense; and it was not until the coming of Justin Winsor that her collections achieved their full usefulness. "The mere accumulation of books," said Winsor in his first report, "is not in itself sufficient: a great library should be a workshop as well as a repository." This the modern college library, with its systems of reserved shelves, its seminar and departmental libraries, presided over by scholars specially qualified to act as guides, its general reading rooms, and its efficient system of classification and cataloguing, has become.

The method of administering a college library by a corps of central officers reached its maximum of efficiency some years ago. A general oversight has to be retained in some officer or officers, and the attention of specialists has consistently been fixed upon the best methods of cataloguing, shelving, delivering and general organization. But as the peculiar functions of departmental libraries have developed, it has been necessary to have experts who can treat the library of a department as its "laboratory," and who can make the seminar collections of the department of Romance

languages or of sociology as useful as—for example—the head of the Harvard law school library was making his ten years ago. Harvard now has her eleven departmental libraries and thirty-eight special libraries, administered in partial independence of the general library. And the results upon the student body of the more complex method of book-handling and distribution are now fairly plain. The great gain, in a general literary sense, is probably in the large opportunities to introduce students to the great field of bibliography and book-classification, and to enable them to understand the wealth of information to which a few simple keys will give admission.

That college students no longer browse as they once did, that they do not spend solid hours in library alcoves, is a common complaint. Some libraries may once have neglected the general reader. But there is nowadays a very frequent provision of some central stock of ten thousand volumes or so. If these are attractively arranged, they are a standing temptation to the student. If care is taken in their classification, they reveal the relation among various parts of the world of thought, and may lead the undergraduate to read with some systematic scheme. At any rate, no university library should be without something answering to a "college study" to attract and hold the casual reader.—*The Nation.*

A BROADER PROGRAM OF PHYSICAL EDUCATION[1]

I. IN its most comprehensive sense the phrase "physical education" may be held to include an almost indefinite number of educational ideals, methods and practises looking to the conservation and promotion of bodily health, including the related powers and qualities of strength, skill, endurance and physical adaptability. But as a department of systematic education, and especially in relation to schools, the following are its principal divisions: (*a*) The provision and active utilization of sanitary conditions in educational surroundings and activities (school sanitation, sometimes called school hygiene); (*b*) the correction of physical defects through special efforts initiated in, and even undertaken by, schools; (*c*) instruction of children in those principles and practises conducive to conservation and promotion of health; and (*d*) the provision of the means, incentives and direction needed for the plays, games and training which conduce to physical growth, strength and skill along serviceable lines (hereafter called physical development).

II. Physical development in the sense here used derives in large part from the spontaneous or voluntary activities instinctive with children and youths living under a favorable environment of opportunity and stimulation—play, games, sports, reaching into such semi-useful occupations as hunting, fishing, gardening, errand running, etc. It can also be made to result in part from prescribed or directed activities—gymnasium training, military training, work, etc.

III. Under settled rural conditions many opportunities and incentives for physical development are found which are not available amidst urban surroundings. These include open spaces for play activities, the incitements offered by animals, woods, steeps, water, home helping occupation, visit exchanging, etc. Facilities for physical development under direction are less available and less practicable in rural than in urban communities—and perhaps less needed.

IV. It is probable that the relative need of conscious and systematic provision of means, incitements and direction for physical development, is much greater under urban than under rural conditions; while the conditions favoring such conscious and systematic provision are also much better in urban communities. Hence, except where specifically otherwise stated, the following considerations will be submitted as bearing on urban conditions, and as therefore applying substantially to persons in all occupations except farming.

[1] Notes submitted at request of Commission on Military Education and Reserve (Boston), October 25, 1915, by David Snedden, Commissioner of Education for Massachusetts.

V. Physical development in urban communities has heretofore been left largely to chance, as it always has been in rural sections. Streets and vacant lots make poor playgrounds; woods, water, animals, accessible distances, as incitements to wholesome physical activity are wanting. Enclosed gymnasiums—at best available only to a few—are artificial and unstimulating. Collective activities—athletics, games, adventure—are carried on under hampering restrictions which become provocative of defiance of constituted authority.

VI. When philanthropy and public effort intervene—private effort is effective only with the prosperous who can go to mountains or seashore, or who can send their sons to expensive camps—the means provided tend to become elaborate and costly. Playgrounds, swimming pools, gymnasiums, stadiums, trained instructors, all require large financial outlay as now standardized. Furthermore, these agencies in practise reach only a few, and those already the best developed. Athletics are so specialized that youths most in need of the development they could afford are not reached. The specialization of talent in various phases of physical prowess is a deplorable result of interschool or intercommunity athletics. Vicarious expression of instincts for physical expression is probably softening to more than muscular fiber.

VII. It is probable, therefore, that from the standpoint of all activities where well-developed bodies, lasting health, and potential strength and endurance are required, modern urban conditions are bad for our youth. Business life, community defence, parenthood—for all these, at least, to say nothing of the possibilities of personal character, and the happiness of wholesome living, urban life is poor preparation against hours and years of need. For the moment, we are confronted by the thought of national defence and our unreadiness for possible crises. We ask now as to the possibilities of military training in public schools.

VIII. It is obvious that under conditions now existing none of us are exactly clear as to what constitutes effective military training. The maneuvers of the parade ground and drill hall seem to have little positive value in modern warfare—in some important respects, indeed, they may have a negative influence. We greatly need more searching analysis of the so-called ends of "teaching habits of obedience," "learning to obey orders," taking care of oneself," and other naïve and uncritical psychological generalizations.

IX. Military training is now found in many private, and some public, secondary schools. Its scope and methods are necessarily restricted by school conditions, but examination of prevailing practises would probably show certain definite results therefrom. Habits of body posture of a well-known character, some idealization of the soldier's career, and keen interest in uniforms and other personal decorations—these can be distinguished and described. Military drill in schools is sometimes asserted to be a valuable means of school discipline, and it is also contended that the youth thus trained has instilled a special sense of honor. These are doubtful claims as yet, and need examination. How far the results of such training would carry over under conditions of modern warfare is also doubtful. Probably familiarity with the rifle and some degree of skill in its use—achieved at least in some private schools—is the most certain asset. Ability to ride—certainly at times a valuable asset—is also achieved in some cases.

X. We ought to know more, too, as to the positive contributions of military training to physical development, before reaching general conclusions. The largest need of the urban youth, probably, on the side of physical development, is a great deal of varied and relatively spontaneous physical activity. It is probably very easy to have too minute drill and habituation in gymnasium or drill hall. A large part of the military training now found in schools is always a "getting ready" for extensive physical exertion and expression, which, however, never comes. The activities of the Boy Scouts may be much better, as contributions to needed physical development, at this stage, than those of the Manual of Arms.

XI. In view of the existing uncertainty as to the scope and character of desirable military training, it is suggested that special attention should be given to the following possibilities: (*a*) The provision under adequate direction of a broader program of physical development of a simpler and more rugged character than is now found in our urban schools; (*b*) the widespread fostering of small-caliber rifle practise as an accomplishment among school boys from 12 to 16 years of age; (*c*) the promotion at state expense of summer camps with much physical, and some military, training, which, taking boys at school age—preferably sixteen to eighteen—might be continued into young manhood, at first on a voluntary, and, if feasible, later on a compulsory basis for all.

XII. A program of simple and robust physical development, organized and carried out by trained leaders, and designed especially to reach all city boys from twelve to eighteen years of age, ought to be a possibility. The elements of it are now available. The longer school day—seven or eight hours, to include at least two hours for physical development—is now found in some private schools and several public-school systems. Athletics must be so adjusted as to give scope to all who will participate, and obligatory forms should be devised for the minority who will not volunteer. Gymnasiums should be limited to corrective work and dancing, or be dispensed with. The program of school studies should be made sufficiently flexible to permit at times —perhaps twice each week—of extensive excursions, meets, trips to swimming places, etc. Swimming, like other activities, should be carried on out of doors. "Hikes" in stormy weather should be arranged, care being taken to insure suitable clothing, and a rubdown and change at the end. Parks, avenues and country roads should be used no less than playgrounds. Indoor quarters, apparatus and equipment should be reduced to the minimum. The one indispensable provision should be private space for changing clothes and rubbing down. The shower is probably a needless luxury. The indoor plunge should give way to the pond in the outskirts of the community—a plan which is feasible except in largest cities. Every effort should be made to encourage exposure to all sorts of weather and adaptability to varied conditions—the ideals and powers of endurance connected therewith certainly being assets for war as now waged. It is necessary to repeat that paraphernalia and trappings for this program must be reduced to the minimum or the program can not succeed.

XIII. But enlightened and skilled direction is indispensable. In a city of medium size a man worthy of a salary of five thousand dollars should be in charge—a deputy superintendent of schools. But the program, as a whole, does not contemplate large financial outlay for service, because the greater part of the direction of groups should be under unpaid lieutenants from the schools themselves, detailed for short periods of responsible leadership—the best possible initial training for the officers of the future. Nowhere have we begun to realize the possibilities of this unpaid service. Out of a city on an afternoon or evening—and ability to travel in the dark is now surely an asset for the soldier—it ought to be possible to send hundreds of hiking parties of younger boys under charge of responsible high-school upper classmen detailed for this purpose and getting their several kinds of training thereby. Games, contests, swimming, rifle practise, etc., should all be thus conducted. Under scientific direction from the center, such a program ought not to be costly as regards personal service.

XIV. Shall rifle shooting be developed as a school art? The question deserves examination. It is surely entirely practicable to have boys, city boys and in all their numbers, learn the use of the rifle. Facilities for practise with small-caliber ammunition can readily be provided if the semi-weekly accompaniment of the "hike" is provided. Rifle shooting appeals to the "achieving" instincts of most boys. It probably lays the foundations for most forms of successful warlike defence, even under conditions of modern military practise. It is suggested that if rifle practise

is provided in schools, it should be begun within the period of compulsory school attendance—under fourteen years of age. Otherwise, this most obvious of the military arts would not be democratized, would become the prerogative of a select few, and would be viewed with suspicion by entire classes of the population.

XV. If widespread military training is now to be promoted seriously, it can probably be most effectively and economically achieved through the summer camp, which is especially suitable for boys over sixteen years of age. Such camp should not be restricted to boys then in school—again, because the opportunity is afforded to a limited and relatively prosperous class. On the other hand, compulsory attendance would hardly be practicable as a condition for school boys, unless it were part of a general program of obligatory military training. But if attendance could be had without too great expense to the individual—which necessarily involves public or private subsidy—a very large attendance could even now be procured. Here, again, the principle of well-paid general direction, and unpaid assistance, is capable of large development and application.

XVI. In any discussion of the proposals here suggested innumerable obstacles can be imagined. But it is essential that the subject be first examined in its largest aspects and then accommodations be made for particular conditions. For example, some of the suggestions are not practicable in our largest cities. But most of our urban population is not found in the largest cities—most of it is in cities in which a walk of a mile will bring one to open spaces. One thing is certain—the entire matter of the future physical development of our urban youth needs comprehensive and critical examination, even if that call into question some of our ancient prepossessions.

SOCIETIES AND MEETINGS

THE ASSOCIATION OF URBAN UNIVERSITIES

A conference on cooperation between the cities and universities in training for public service was held at Cincinnati, November 15–17, under the presidency of Dr. Charles W. Dabney. The program was:

Monday, November 15. 8 P.M.: Welcome by the Mayor of Cincinnati. Response by Chancellor Charles R. Norton of Buffalo. Addresses—The University and the Municipality: Dr. Philander P. Claxton, United States Commissioner of Education; President Robert A. Falconer of the University of Toronto. 9 P.M.: Reception at the university to delegates and visitors.

Tuesday, November 16. 10 A.M.: The Needs for Cooperation: Dr. Hollis Godfrey, president of Drexel Institute, representing the city of Philadelphia; Mr. George F. Willett, of Boston, member of executive committee of the National Civic Federation; Dr. Glenn L. Swiggett, secretary for foreign service of the Pan-American Union. 2:30 P.M.: Visitation of Cincinnati institutions under the escort of citizens. 8 P.M.: Sinton Hotel Convention Hall. Methods of Training for Public Service: Mr. George R. Wallace, of the Pittsburgh Chamber of Commerce; Mr. Charles F. Gettemy, director of the Massachusetts Bureau of Statistics; Professor Charles A. Beard, department of political science, Columbia University, director of New York Training School for Public Service; Dr. Henry M. Leipziger, associate superintendent of education, New York City.

Wednesday, November 17. Results of Cooperation in Education: Professor Augustus R. Hatton, department of political science, Western Reserve University; President Parke R. Kolbe, Municipal University of Akron; President Lemuel H. Murlin, of Boston University. 2:30 P.M.: Visitation of Cincinnati institutions under the escort of citizens. 7 P.M.: Dinner given in honor of the visiting delegates by the citizens of Cincinnati. Speakers: Mr. Henry Bruère, city chamberlain of New York; Dr. Leon C. Marshall, dean of the college of commerce, University of Chicago; President Sidney E. Mezes, College of the City of New York; Mr. John H. Fahey, of Boston, president of the National Chamber of Commerce.